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ABSTRACT

This study investigated the questions of whether addicts have more negative self-attitudes than their matched controls, and if they do, whether the constructs of self theory are able to explain the differences. Subjects were selected from white middle socioeconomic status (WMSES) narcotic addicts being treated under the Narcotic Addict Rehabilitation Act of 1966. Persons who abuse marihuana, amphetamines, and/or barbituates exclusive of the opiates are not eligible for treatment under provisions of this law. The research data were collected by oral interview, written responses to a questionnaire, and administration of a copyrighted measurement scale, the Tennessee Self-Concept Scale. The results showed that addicts have significantly more negative self-attitudes than their matched controls. It also appears that the WMSES addict has some unique childhood background traits. Another important finding was that simply being reared in an area where narcotic use is common increases the risk of addiction. (Author)

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A Controlled Study of White Middle Socioeconomic Status Addicts

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Self-Concept and Drug Addiction:

A Controlled Study of White Middle Socioeconomic Status Addicts

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SUMMARY AND MAJOR FINDINGS

Summary

Narcotic addiction is a public health problem about which many of the parameters remain unknown. Recent social awareness of the problem is evidenced by increased public spending for rehabilitative and preventive efforts. One of the reasons for this awareness may be the increased incidence of white middle socioeconomic status youth who are becoming addicted to narcotics.

When the lifestyles and developmental patterns of narcotic addicts are studied, a profile emerges which is strikingly congruent with the patterns self-theorists describe as conducive to negative self-attitudes. This apparent association raises several questions: If addicts and nonaddicts are matched on a number of addiction-related variables, will the addicts more frequently have negative self-attitudes than will the nonaddicts? If such differences do exist now, did they exist prior to addiction? If they did exist prior to addiction, are they a clue to addiction etiology? This study evolved from these questions and was based on the broad assumption that narcotic abuse is directly or indirectly the result of a need to maintain positive self-attitudes.

Early pioneers of self-theory include William James, Charles H. Cooley, and George H. Mead. Their contributions have paved the way to contemporary self-theory as expounded by authorities such as Morris Rosenberg, Stanley Coopersmith, William Fitts, and Ruth Wylie. Their works gave support to the basic contention under investigation in this study: self-theory offers clues to the etiology of addiction.

The major hypotheses tested in this study were developed from a conceptual model: 1) addicts as a group have negative self-attitudes; 2) the decision to *try* narcotics is directly or indirectly the result of an attempt to maintain or promote some degree of positive self-attitudes; and 3) white middle socioeconomic status (WMSES) addicts who were adolescents during the past two decades represent a subgroup of addicts who will have extremely negative self-concepts.

Three major hypotheses were tested in the study: 1) measures of self-attitudes would distinguish those subjects who became narcotic addicts from those who did not; 2) antecedent conditions posited to result in positive self-attitudes would distinguish those subjects who became addicts from those who did not; and 3) developmental conditions, situations, and experiences which purport to be indices of early self-attitudes would distinguish those subjects who became addicts from those who did not.

The subjects were selected from WMSES addicts receiving treatment under NARA, a federally sponsored program. Each addict was matched with a nonaddict control for age, sex, race, and socio-economic status (SES). An attempt was also made to match the addicts and controls on similar background variables by selecting the controls only from those who had come from the same neighborhoods as the addicts or who had attended the same schools.

Minnesota and Washington were the two locations selected for study first, because they were far enough apart geographically to suggest that there might be differences due to distance alone, and second, because the case-load of the agencies in each area was large enough to recruit the desired study size.

The first major hypothesis, that measures of self-attitudes will distinguish addicts from nonaddicts, was tested using three measures of self-attitudes: the Tennessee Self-Concept Scale (TSCS), the Rosenberg Scale, and self-attitude expressions extracted from the literature. Addicts were found to have, at a highly significant level, more negative self-concepts than their nonaddict controls. Once it was established that addicts have more negative self-attitudes, the important question which had to be addressed was, did the negative self-attitudes precede or follow the addiction? If negative self-attitudes have any etiological implications, they must precede the onset of addiction. Since it is not possible to reconstruct the past, it was necessary to rely on indices of earlier self-attitudes in order to assess the temporal relationship. Some 31 antecedent and index variables were examined, first to see if there was geographical variation between the two addict groups or the two control groups and secondly, to see if the antecedents and indices would distinguish addicts from nonaddicts.

Findings

An initial finding of this investigation was that the WMSES narcotic addict had apparently never before been studied as a distinct population. A review of the literature, including computer searches, revealed no other investigation which identified the WMSES population as a study group under examination. The studies that did describe white addicts could be classified

as follows: those which did not attempt to define "middle class" or middle socioeconomic status, those in which white narcotic users were not separated from polydrug users, and those studies which identified a subgroup of white addicts from a larger population being studied for some other purpose. Thus, until this study, apparently no attempt had been made to isolate the WMSES addict from other addict populations. Few differences were found between the WMSES population studied and other populations previously studied; however, prior to this study, the similarities had not been documented.

A second general finding had to do with the procedure by which controls were selected. In effect, this study offers a "pilot-trial" approach for matching controls for narcotic addict subjects. As such, it offers promise as a workable procedure by which larger matched-pairs studies of addicts might be undertaken.

Drug Use Behavior

The WMSES addicts began their drug histories about age 15 by experimentation with nonnarcotics such as marihuana or inhalants; by age 17 this group had experimented with an opiate; within one year the majority were physically addicted. The addicts were all introduced to drug use by friends (as opposed to pushers, families, or by iatrogenic means). All but one of the addict subjects had arrest records; two-thirds of the addicts reported arrest records prior to first drug arrest. The NARA program requires that all patients be given, as a part of their treatment program, a six-month period of inpatient care in a drug free environment. After release from inpatient care, patients are supposedly maintained drug free by casework supervision and urine testing. The addicts, however, admitted drug use during this period. Eighteen percent (22% from Washington and 14% from Minnesota) reported that the longest period they had ever been abstinent since their first physical addiction was less than six months. Nine percent of the Washington group and three percent of the Minnesota group reported they had *never* been abstinent from drugs. Some of the subjects willingly admitted active drug use while at the inpatient facilities.

In terms of the ways in which the addicts obtained their drugs and maintained their habits, the WMSES population varied little from other addict groups. Most subjects used drugs obtained from the "street" by illegal means. Financial support for their habits came from sneak-thief activity or nonviolent crime. Less than 10 percent of the addicts actively participated in violent criminal behavior such as holdups and muggings. Of those who did participate in violent crimes, only 41 percent reportedly carried a gun or other weapon. (This actually represented only four percent of the total population.)

A finding which might be unique to the WMSES population but for which no comparable data were found, was that about 10 percent of the study group reported its drug supply as being from "legal" sources, drugs obtained across the counter by prescription. This group often delighted in revealing how they had a physician or pharmacist who was "keeping them in drugs."

An important finding which might conflict with some of the literature had to do with the "contagiousness" of narcotics. Authorities have reported the influence of the community on addiction incidence. Simply being reared in an area where narcotic use is common increases the risk of addiction. Thus both the addicts and controls were asked about the number of addicts in the community in which they were reared. There was no difference in the perception of the number of addicts in the childhood communities of the addicts and the controls. Both addicts and controls reported most frequently that they thought they were reared in communities which had "fewer addicts than most communities." However, when asked how old the subjects were when they first met an addict, the WMSES addicts from both locations reported a significantly younger age than did the controls. Following the contagion theme further, it was found that the addicts reported no greater number of drug users or problem drinkers in their families than did their matched nonaddict controls.

Self-Attitude Measures

Two established scales (Rosenberg and TSCS) were employed to measure self-attitudes. The scores of both scales showed that addicts have significantly more negative self-attitudes than their matched controls. Normative data were available for one of the scales (TSCS); when the subjects' scores were compared to the norms, it was found that the controls did not differ significantly, but the addicts did have significantly lower scores.

As another "measure" of self-attitudes, five self-appraisal statements which the literature describes as consistent with designated self-attitude levels, were solicited from the subjects These "expressions" of self-attitudes were examined in full awareness of their limited validity and reliability as a measure of self-attitudes. The expressions were all found to be associated with measures of self-attitudes (TSCS) in the predicted way. However, only two of the expressions gave support to the first major hypothesis by distinguishing addicts from nonaddicts. Addicts more frequently than their matched controls reported that they had strong reactions to criticism and that they found it harder than others to make decisions.

Thus, the conclusion of the self-attitude measurement data is that WMSES have more negative self-concepts than do their matched nonaddict controls.

Preaddiction Histories

In disclosing that the addicts were found to have negative self-attitudes more frequently than the nonaddicts, the immediate question raised by such a finding is whether or not these negative attitudes occurred before or after the onset of addiction. A broad retrospective assumption had to be made--if self-attitude antecedents and early self-attitude perceptions distinguish addicts from nonaddicts, then in all likelihood, these negative self-attitudes preceded addiction.

Thirty-one variables suggested in the literature as being either antecedent to, or indices of, the self-concept were analyzed. Many of these variables were closely related in content and in all probability were indices of the same or similar constructs. Nonetheless, of the 31 variables reported, a statistically significant 75 percent successfully distinguished addicts from nonaddicts. In every instance, there was no geographical variation in the way the two addict groups or the two control groups responded. That a significant number of antecedent variables were able to discriminate addicts from nonaddicts gave support to the contention that addicts possess negative self-attitudes prior to addiction.

The childhood experiences studied develop a background profile of the WMSES addict. Although little similar data exist about addicts in general, it appears that the WMSES addict has some unique background traits.

A self-perceived profile sketch of the childhood of the WMSES addict of this study would describe a child whose natural parents were married and living together but who were not compatible. These parents failed to provide much attention, affection, and recognition for their child, and were perceived as providing neither love nor trust. The father, more frequently than the mother, was seen as showing little affection; in general, the addict did not like his father. Limit-setting by parents was often slight; when punishment was administered, it was inappropriately harsh. The addict was dissatisfied with himself as a child, did not get along with his childhood peers, and disagreed with the views and opinions of significant others, such as parents and teachers. Even during early childhood he perceived himself as not meeting the expectations of those significant others. He came from a family with siblings but did not see the sibling relationship as cohesive. He described his home life as unpleasant; in fact, he desired to leave home at an early age.

CONTENTS

	page
Summary and Major Findings	iii
1. Introduction	1
2. Literature Review	5
3. Psychosocial Commonalities of Narcotic Addiction and Self-Theory	13
4. Addict Group Drug Use Patterns	18
5. Measurement of Self-Attitudes	31
6. Measurement of Pre-Addiction Variables	43
7. Conclusions	48
References	53
Appendix - Methodology	61

TABLES

page

Table 1. Drug Initiation Patterns 21

Table 2. Stated Source of Drug Supply 23

Table 3. Participation in Criminal Behavior 24

Table 4. Age of First Arrest 26

Table 5. Stated Number of Addicts in Community Where Reared 27

Table 6. Reported Age at Which Subjects First Met Narcotic Addict 28

Table 7. Reported Number of Drug Users in Family Up to Age 17 29

Table 8. Number of Alcoholics or Problem Drinkers in Family Up to Age 17 30

Table 9. Reported Age When First Started to Drink to Get High 30

Table 10. Mean TSCS Scores of Controls as Compared to Normative Data 32

Table 11. Mean TSCS Score of Addicts as Compared to Normative Data 32

Table 12. Distribution of TSCS Scores by Location and Self-Attitude Dimension 35

Table 13. Distribution of TSCS Scores by Dimensions . . . 36

Table 14. Mean Scores Obtained on Rosenberg Scale 37

TABLES (Cont'd)

page

Table 15. Stated Decisionmaking Ability Compared to TSCS Score 39

Table 16. Distribution Between Addicts and Controls as to Their Perceived Decisionmaking Ability . . 40

Table 17. Subjects Stated Reaction to Criticism Compared to Mean TSCS Scores 41

Table 18. Distribution Between Addicts and Controls of Stated Reaction to Criticism 42

Table 19. Summary of Antecedent and Self-Perception Variables 45

Table 20. Demographic Distribution of Study Population 65

1. Introduction

"The thing about heroin is that it gives a human being a purpose in life. It gives him an occupation, an identity, friends, a chance to be better at something ..."

A quote from a 16-year-old addict; taken from Oakley Ray's *Drugs, Society, and Human Behavior*, 1972.

Narcotic addiction is one of the major public health problems facing the Nation today. It is a complex problem about which relatively little is known. Government officials estimate that the number of narcotic addicts is in excess of 500,000, but what proportion of this number represents new cases, ex-addicts, or those who are temporarily abstinent, remains obscure. The parameters of this problem defy current methods of measurement, with only crude assessments of prevalence and incidence existing. What *is* known is that the problem costs in excess of 2,000 lives each year in the United States and the social costs of narcotic addiction, such as sickness, family suffering, lost productivity, and crime, are practically impossible to estimate.

Indeed, Dr. David Smith, the physician and psycho-pharmacologist who is director of Haight-Ashbury Free Clinic in San Francisco, believes that the Nation is experiencing an epidemic of heroin abuse focused on the white, middle class suburban youth (7, p. 243; 70, p. 110). The 1969 records of the Federal Bureau of Narcotics and Dangerous Drugs (29) show a more than twofold increase in the number of whites reported as narcotic addicts over the previous year(1968 BNDD reports also showed a record high number of reported white addicts). Nedd Willard, in discussing the drug scene in New York City, states that heroin use is on the increase, particularly among middle class whites (82, p. 16). *The Journal of the Indiana State Medical Association* documents a similar situation existing in Indiana (62, p. 515). An official analysis of drug-related arrests in California for the past decade, conducted by the San Jose Public Systems, shows that narcotic arrests among the white middle class have risen in all areas of the State (73, p. 60). Sheppard et al. write that now

is the "period of the middle class junkie. No longer is heroin abuse 'safely' hidden in urban ghettos. A new style of the heroin addict has been silently evolving for several years in white middle America" (70, p. 110). While authorities may differ as to exact prevalence and incidence statistics, there seems to be no disagreement that the white middle class narcotic addict represents a growing social problem about which more needs to be known.

The etiology of addiction is quite obscure, hidden within a matrix of psychological, sociological, environmental, and "contagion" factors. Authorities such as Chein (16), Cloward (20), and O'Donnell (60) have shown by their studies that race and socioeconomic status are important variables related to the incidence of narcotic addiction. Lack of opportunity for upward mobility, as well as the effect of being reared among addicts, seems to increase the probability of an individual's becoming an addict. Questions then arise: What about white middle socioeconomic status (WMSES) youths who seemingly have the necessary opportunities for upward mobility and who are reared in relatively addict-free communities? What does the WMSES youth have in common with other addicts? If race and socioeconomic status (SES) are controlled, what would be some of the differences between those who become addicts and those who do not?

Data concerning the distribution of the addict population across ethnic and socioeconomic boundaries are incomplete and sometimes conflicting. In the past the literature has typified the narcotic addict as belonging to a minority group, living in a slum, and having only a few opportunities available for upward mobility (1;5;6;24;59).

From a clinical viewpoint, the narcotic addict frequently assumes a posture of isolation, has a low anxiety and frustration tolerance, and provides a self-description of hopelessness, boredom, and emptiness (43, p.206; 14, p.134; 24, p.80; 35, p.81). While there may be confusion as to whether or not such characteristics are antecedents of, consequences of, or unrelated to addiction, there is little doubt that the observations are quite consistent with what self-theorists would describe as negative self-attitudes. When the developmental life patterns of the "typical" addict are observed (absence of male figure in family, broken home, few friends, little parental recognition or approval, etc.) (43, p.205; 69, p.100; 35, p.81; 16, p.14), the parallels with self-theory postulates are even more striking.

The research problem, then, becomes that of determining whether addicts, who are matched with nonaddicts of the same ethnic background, socioeconomic status, age, and sex, have more negative self-attitudes than their matched controls, and if they do, are the constructs of self-theory able to explain the differences?

In broad outline, this study focuses on the assumption that for a selected population of white middle socioeconomic status narcotic addicts, clues to the etiology of their addiction might be identified and explained by self-theory. It attempts to identify among a specific population of addicts and controls certain psychosocial characteristics associated with self-attitudes and to determine the relationship between self-attitudes and the condition of narcotic addiction.

Definition of Key Terms Used

Narcotic Addict. The term narcotic addict refers to anyone who has been so diagnosed and found eligible for treatment under provisions of the Federal Narcotic Addict Rehabilitation Act of 1966. To be found eligible, an individual must be examined by two physicians (one of whom must be a psychiatrist) to ascertain that the individual is physically and psychologically addicted to a drug defined as a narcotic by the Bureau of Narcotics and Dangerous Drugs. Persons who have abused marihuana, amphetamines, and/or barbiturates exclusive of the opiates are not eligible for treatment under provisions of this law.

Narcotic Drug. The use of the terms narcotic or narcotic drugs in this study makes reference to any such drug so defined in 1966 by the then Bureau of Narcotics and Dangerous Drugs. Such drugs are, by definition, those which have chemical properties and pharmacological effects similar to the opiates. They include opium and morphine, their derivatives, compounds, and synthetic equivalents. Examples of such drugs are heroin, morphine, methadone, codeine, paregoric, demerol, as well as others (77, p. 3).

Middle Socioeconomic Status. Middle socioeconomic status is defined using Green's Two-Factor Index of Socioeconomic Status (37), which is based on the two scales of education and occupation. The scoring procedure is such that both educational and occupational attributes are weighted by standardized scores and the sum of the products of the status attributes yields an assigned SES score. Using Green's standardized scoring procedure, middle SES in this study included any scores which fell within plus or minus one standard deviation from the distribution's mean score.

The SES of the parents rather than that of the study population was measured, a decision based on three factors. First, because of the expected young age of the study population, many of the addicts had not had the opportunity to establish their own status. Second, the lifestyle of the addict would tend to lower the SES rating. (Many were without occupation and some had terminated educational efforts as a result of their drug-oriented

life.) Third, the theoretical concepts under consideration in this study were focused to a great extent on early developmental experiences, that is, those events and experiences which occurred prior to addiction, and while the subject was under parental influence.

Self-Attitudes. The term self-attitudes as used in this study is based upon Stanley Coopersmith's definition of self-esteem (22, pp. 4-5). Self-attitudes are the predisposed evaluations which the individual makes and customarily maintains with regard to himself; they express the poles of approval or disapproval and indicate the extent to which the individual believes himself to be capable, significant, successful, and worthy. Self-attitudes are *personal judgments of worthiness* and are the subjective displays by which the individual conveys his picture of himself to others (through verbal report and other overt expressive behavior). Self-attitudes as used in this study were phenomenological; that is, those attitudes about self which are in direct awareness--the *conscious* perceptions, cognitions, and feelings of self.

2. Literature Review

The conceptual model upon which this study is based borrows much from the contemporary works of Fitts (30), Wylie (85), Coopersmith (22), Rosenberg (65), and Kaplan/Meyerowitz (43), whose efforts have helped crystalize the contributions of many others into what is now called "self-theory."

Coopersmith succinctly consolidates self-theory as "an organized configuration of perceptions pertaining to the self which are admissible to awareness. It is composed of the following:

1) perceptions of one's characteristics and abilities

2) perceptions of one's relation to others and their environment

3) value qualities perceived or associated with one's experiences

4) personal goals which are perceived as having positive or negative worth" (22, p.37).

Numerous authorities have contributed to the constructs of self-theory. Exactly who should be given special recognition becomes an issue of the theoretical context under which the self-concept is being examined. For example, the works of Erickson (25;26) and Rogers (64) make use of the concept self-esteem, but their theories employ many other unrelated assumptions, such as the function of critical age periods, the overall turmoil of adolescence, or specific crisis experiences. Rogers' work is concerned with the individual's experiences relating to self and how these experiences are *accepted* by the individual. Rogers, like others, believes that only the individual himself has complete knowledge of his experiences. As such, only the individual can be a valid source of information about himself.

Authorities such as Symonds (75) or Koffka (44) describe the self in terms of psychoanalytic theory using the concept of ego, whereas Lundholm (54) prefers to describe the self in terms of reaction to conflict. Sarbin (66) discusses self using concepts

of cognition; that is, one's awareness of his body (the somatic self), his organs (the receptor-effector self), and his social behavior (the social self).

In practically all discussion of self-theory, four names emerge as important pioneers in the formulation of self-theory. These four, William James, George H. Mead, Charles Cooley, and Karen Horney, provided the major insights and developed the guidelines which contemporary researchers have built into self-theory.

William James. James, a psychologist and philosopher, was one of the first to consider the subject of self. In his work, *Principles of Psychology,* 1890, he points out that one's aspirations and values are essential considerations in determining how one regards himself. "That he is able to beat the whole population of the globe minus one is nothing; he has pitted himself to beat that one; and as long as he doesn't do that, nothing else counts ... with no attempt there can be no failure, no humiliation. So our self-feeling in this world depends entirely on what we back ourselves to be and do. It is determined by the ratio of our actualities to our supposed potentialities; a fraction of which our pretentions are the denominator and the numerator, our success: thus self-esteem equals success over pretentions" (58, pp.187 to 188). Self-esteem, then, is a function of the difference that exists between one's personal concept of himself as he is and his ideal of what he would like to be.

An extremely important concept which was introduced by James, but expanded on by many others, is what he called the social self. The social self, according to James, is the image which man portrays to others. Each person has many such images, and each one is an important part of his whole self-image: "To wound any of these, his images, is to wound him" (58, p.179).

Charles Horton Cooley. Cooley's major work, *Human Nature and the Social Order,* 1902, emphasized the social self which William James had introduced. Cooley frequently quotes James' text as he develops his thesis; for example, Cooley states that "The social self is simply any idea, or system of ideas, drawn from communicative life, that the mind cherishes as its own" (21, p.179). Cooley accents his discussion of the social self-feeling by saying that this feeling exists with all people as the mainspring of their endeavor and as the chief interest of their imagination (21, p.208).

One frequently quoted concept of Cooley's, which is closely related to the "social self," is what he describes as the "looking-glass self," how the individual imagines he appears in another's mind. "As we see our face, figure and dress in the looking

glass; and are interested in them because they are ours, and pleasure or otherwise with them ... so in imagination we perceive in another's mind some thought of our appearance, manners, aims, deeds, character, friends, and so on, and are variously affected by it" (21, p.184). The "looking-glass self" is comprised of three principal parts: 1) the imagination of one's appearance to the other person; 2) the imagination of that person's judgment of the appearance; and 3) an evaluation of that imagined judgment, such as pride or mortification.

Cooley makes a point which is extremely important to the hypotheses being examined in this study: "If a person conceives his image as depreciated in the mind of another; and if, instead of maintaining an aggressive attitude and resenting that depreciation, he yields to it and accepts the image and judgment upon it, then he feels and shows something in the way of humility (or) shame, mortification, confusion, diffidence ... and so on" (21, p.243). This point is relevant to this study, in that one of the basic contentions is that drug use is one way in which people react to depreciative attacks on their social selves. Drug use represents a flight from the source of social depreciation with consequent attachment to new social impulses less damaging to the social self. Thus a youth, if his social self is perceived as being depreciated, will move from peer group to peer group, finally attaching himself to one which allows his social self an acceptable maintenance.

George H. Mead. Mead's text, *Mind, Self, and Society*, 1934, is also an elaboration of what William James called the "social self." Mead asserts that the self is something which is developed after birth from processes of social experiences; he further claims that the individual sees himself by becoming an object to himself through incorporating the attitudes of other individuals in a group. "The self, as that which can be an object to itself, is essentially a social structure, and it arises in social experiences" (58, p.140).

Mead believed that all men seek the "realization of this self," a realization which can be attained only by the self's relationship to others. "It (the self) realizes itself in some sense through its superiority to others, and it recognizes its inferiorities in comparison with others" (58, p.204). The individual, he stressed, responds to himself in much the same way as he perceives the response of significant others to him. Stanley Coopersmith, in discussing George H. Mead's contribution, writes, "To Mead, no man is an island in his self-appraisal. No matter how isolated and independent he may believe himself to be, he carries within himself the reflecting mirror of his social group. If he places high value on himself, there have been key persons in his life who have treated him with concern and respect; if he holds himself lowly, significant others have treated him as

an inferior object. The views of generalized (significant) others as expressed in their manner of treatment are Mead's key to the formation of self-esteem" (22, p.31).

Karen Horney. Karen Horney, of the same era as George H. Mead, in 1939 wrote that "To some extent everyone living in an organized community must keep up appearances. To some extent, everyone of us has imbibed the standard of our environment. To some extent we are all dependent on the regard others have for us" (40, p.216).

In 1950, Horney surmised that "Whatever the conditions under which a child grows up, he will, if not mentally defective, learn to cope with others in one way or another and he will acquire some skills.... The human individual, given the chance, tends to develop his particular human potentialities. He will develop then the unique alive forces of his real self; the clarity depth of his own feelings, thoughts, wishes, interests, the ability to tap his own resources, the strength of his will-power; the special capacities or gifts he may have, the facility to express himself and to relate to others with his spontaneous feelings ... in short, he will grow, substantially undiverted toward self-realization.... Only the individual himself can develop his given potentialities. But, like any other living organism, the human individual needs favorable conditions for his growth.... But through a variety of adverse influences, a child may not be permitted to grow" (39, p.17).

Horney believed that many things, such as lack of parental love, lack of recognition for accomplishments, and similar environmental deprivations, keep a child from self-growth. A child's reaction to environmental deprivation depends upon the contingencies of the environment. "Briefly, he may try to cling to the most powerful person around him; he may try to rebel or fight, he may try to shut others out and withdraw. In principal, this means he can move forward, against or away from others" (39, p.18).

Karen Horney, like William James and George H. Mead, stressed the importance of the positive reinforcement which results from successful experiences. She believed that success experiences provide idealized images of one's capacities and abilities. These ideals tend both to strengthen self-esteem and, at the same time, lead to dissatisfaction if the ideals are not met.

While the basic theoretical formulations of self-theory are not new, there appears to be a contemporary reawakened interest on the part of behavioral scientists. Three contemporary researchers stand out as offering major contributions: Morris Rosenberg (65), Stanley Coopersmith (22), and William Fitts (30), each of whom has developed scales intended to measure self-attitudes.

The results of their research are used often in interpreting and generalizing the findings of this study.

Morris Rosenberg. Morris Rosenberg, a sociologist at the National Institute of Mental Health, surveyed over 5,000 adolescents for the purpose of seeing "how they saw themselves, how they felt about themselves, and what criteria for self-evaluation they employed." The scale Rosenberg developed from this survey to measure "self-esteem" has been used frequently in studies of self-attitudes because it is easy and quick to administer and because it has established validity and reliability. The Rosenberg study emphasized social antecedents of self-esteem and, as such, demonstrated that, 1) ethnic group affiliation is unrelated to self-esteem; 2) socioeconomic status is only weakly related to self-esteem; 3) religion has no effect on self-esteem; 4) sex is not related to self-esteem; and 5) it makes no difference in regard to self-esteem whether one comes from a large city, a medium sized community, or a small town. He did find a strong positive association between high self-esteem and the amount of demonstrated interest and concern provided by parents and significant others (65, p.145).

Morris Rosenberg also made an important contribution to the literature in his discussion of self-attitudes. Self-attitudes are thought not to change radically over the years once they have become realized sometime around adolescence. Rosenberg asserted that attitudes about the self are very much the same as attitudes about any subject. "Social psychological research," he stated, "has suggested that it is easier to change people's minds about new facts, less easy to change opinions, still harder to change attitudes, and hardest of all to change motivation" (65, p.289). Rosenberg goes to great lengths in his text to compare self-attitudes with other object attitudes. Self-attitudes, Rosenberg suggested, are classified by the same dimensions:

> "Thus, if we can learn *what* the individual sees when he looks at himself (his social statuses, roles, physical characteristics, skills, traits, and other facets of content); whether he has a favorable or unfavorable opinion of himself (direction); how strongly he feels about his self-attitudes (intensity); how important the self is, relative to other objects (importance); whether he spends a great deal of time thinking of what he is like--whether he is constantly conscious of what he is saying or doing--or whether he is more involved in tasks or other objects (salience); whether the elements of his self-picture are consistent or contradictory (consistency); whether he has a self-attitude which varies or shifts from day to day or moment to moment, or whether on the contrary, he has a firm, stable, rock-like self-attitude (stability); and

whether he has a firm, definite picture of what he is like or a vague, hazy, blurred picture (clarity)--if we can characterize the individual's self-picture in terms of these dimensions, then we would have a good, if still incomplete description of the structure of the self-image" (65, p.7).

Rosenberg's thesis, which compared self-attitudes to other object attitudes having enduring qualities quite resistent to change, is important in the present study for two reasons. First, his thesis supports the contention that a current measure of self-attitudes is a reliable index of earlier self-attitudes (the assumption of the present study being that self-attitudes form the independent variable and addiction the dependent one). Secondly, if, in fact, addicts do have negative self-attitudes, attempts to change these self-attitudes in later life may be infeasible.

Stanley Coopersmith. Coopersmith's most important work, *The Antecedents of Self-Esteem,* 1967, was a study of 1,748 pre-adolescents (ages 8-10) attending public schools in central Connecticut. His study focused on three dimensions of self-esteem: antecedents, consequences, and correlates. Coopersmith saw his task as examining "various major determinants of self-esteem proposed by other researchers and ourselves and--(deciding) which of them can be considered trustworthy" (22, p.235). He concluded that the most general statement that could be made about the antecedents of self-esteem could be given in terms of three conditions: "total or nearly total acceptance of the children by their parents, clearly defined and enforced limits, and the *respect* and latitude for individual action that exist within the defined limits" (22, p.236). Parents of children with high self-esteem, he found, are those who are attentive toward their children, who structure the worlds of their children but allow them freedom within the structure.

Coopersmith believed that self-esteem is not related to height or physical attractiveness and is only weakly related to social status and academic performance. He argued that such "....respected attributes in middle-class American society assume little, if any, importance in explaining levels of self-esteem. Such results reveal the limited utility of general public standards for understanding and predicting individual subjective appraisals of success.... It is from a person's actions and relative position within this frame of reference that he comes to believe that he is a success or failure, and not in the far broader and more abstract context of general socioeconomic standards" (22, p.243).

William H. Fitts. William H. Fitts, a behavioral scientist from the Dede Wallace Center in Nashville, Tennessee, has spent his entire professional career studying the self-concept and has authored dozens of publications pertaining to this concept. Perhaps his greatest contribution is the development of the Tennessee Self-Concept Scale (TSCS), a self-administered multidimensional measure of the self-concept. Fitt's scale will be discussed in detail in the methodology section in the appendix, as it was the primary instrument used to measure self-attitudes in this study. He describes "self-concept theory" by saying that, "The way an individual views and interacts with the world around him is partly a function of the way he views himself (his self-concept); that his behavior is a reflection or expression of his self-concept; that his self-concept is influenced by his behavior, the reactions he gets from the external world, and his own reactions to himself. Thus there is a constant interaction between his self-concept and his behavior, each influencing the other" (34, cover overview).

Fitts has also devoted much effort trying to extend the work of others who are studying the self-concept, especially those using his scale. He has examined and re-examined numerous studies which have demonstrated the self-concept as the criterion variable of aspects of human behavior such as performance, psychopathology, delinquency, sexual attitudes, anxiety, and many others (but not narcotic addiction). Fitts sees much of the work which is being done on the self-concept as small separate projects, the findings of which are not integrated into any larger framework of knowledge; thus, he is trying to extend the work of others by integrating and synthesizing elements of their research. The number of known separate studies which have made use of Fitts' scale now nears the 1,000 mark (31, p.8).

Fitts agrees with others who have written on the subject that self-attitudes are relatively enduring phenomena. He asserts that some "limited change" in a "positive direction" has been observed in treated psychiatric patients (80, p.13) and that there has been some recorded minor changes as the result of sensitivity training (32, p.18). For the most part, however, Fitts agrees with other authorities that the self-concept is quite difficult to change, and in all probability remains relatively constant throughout life for most people. In his studies on the self-concept and delinquency he summarizes that, "Change in self-concept is difficult to accomplish, and even intensive treatment programs produce little change over short periods of time" (31, p.97). Thus Fitts gives further support to the contention that the way in which one views himself is not likely to change over time.

Ruth Wylie. A contemporary of Fitts who is equally concerned about the "proliferation without integration" of studies and theories pertaining to the self-concept is Ruth Wylie. Her text, *The Self-Concept, A Critical Survey of Pertinent Research Literature,* 1961, is an important contribution toward the condensation of numerous constructs into theory. In discussing the development of the self-concept she states that "all personality theorists who are concerned with constructs of the self, accord great importance to parent-child interaction" (85, p.121). This notion follows from such general ideas as:

1. The self-concept is a learned constellation of perceptions, cognitions, and values.

2. An important part of this learning comes from observing the reaction one gets from other persons.

3. Parents are the persons who are present earliest and most consistently" (85, p.121).

Wylie continues that there are a number of general ways in which social interaction and the self-concept are related, among which are such things as communications with significant others, achievement of valued goals, and recognition by others of achievements.

Wylie's greatest contribution to self-theory is that of trying to objectively report and assess the findings of scores of studies related to self-theory. Unhappily, she concludes that there is such a wide difference in instruments used, in testing conditions, and in the characteristics of the subjects that many of the constructs of self-theory are of somewhat undetermined validity. What is needed (and apparently never has been done) she states, is a large, longitudinal study on which to base a description of the development of the self-concept (85, pp.317-334).

3. Psychosocial Commonalities of Narcotic Addiction and Self-Theory

In reviewing the literature pertaining to self-theory, rather striking commonalities can be seen between the psychosocial developmental patterns of the individual with a negative self-concept and those of the narcotic addict. While these psychosocial "correlates" will be further examined in the remaining sections of this paper, it is pertinent to highlight some of them at this time.

Family Patterns

All self-theorists place major importance on the amount of respectful, accepting, and concerned treatment that an individual receives from significant others in his life. Such recognition can, of course, come from many persons, but parents are almost always included as significant others. Rosenberg (65, p.44) demonstrated that a close father-child relationship is especially important in developing positive self-attitudes. Marin and Cohen (56, p.16) verified the importance of family to children in developing a positive self-image, in that the family provides "connections to whole persons." In discussing the antecedents of self-esteem, Coopersmith asserted that parental acceptance is one of the three most essential conditions needed to develop positive self-esteem (22, p.236).

Looking at the "typical" addict in terms of his family background and self-theory, it is easy to see how unfulfilled his childhood probably was. The addict's family is frequently described as a broken home with the absence of a father figure and the presence of an overprotective mother (Kaplan, 43, p.205; Fort, 35, p.81; Chein, 14; Seldon, 69, p.100). Isidor Chein and his associates found, for example, that almost 50 percent of the addicts in his study came from homes where there was "no father or no other adult male in the household during a significant portion of the boy's early childhood" (16, p.14). David Laskowitz concurs that drug-using persons have backgrounds "of an unstable pampering attitude on the part of the mother, possibly linked with compensatory need to make allowances for the son not having a stable

significant male at home" (49, p.70), and Nathan Seldon writes that "the family of the addict typically provides an unstable environment for emotional growth. The mother's relationship with the addict is particularly critical. The father is detached and unmotivated while the mother, who dominates the family, is viewed as emotionally immature, conflicted, and ambivalent about her family role" (69, p.105). J.P. Fort offers further verification in discussing a study of 100 male heroin addicts whose mothers were seen as overprotective, controlling, and indulgent and whose fathers were almost always absent (60, p.84). Authoritative confirmations of the addict's coming from a broken home with inconsistent role models for parents are plentiful. One further example is offered at this time, although many other examples could be cited. Isidor Chein, who studied two groups of families, 30 families of addicts and 29 of nonaddicts, found that the addicts came from home environments which were "ego damaging ... almost all of the 30 addicts came from families where there was a disturbed relationship between the parents as evidenced by separation, divorce, overt hostility, or lack of warmth and mutual interest. Furthermore, most of these parents either overindulged or harshly frustrated the boys as children.... What they (the parents) wanted for him (the addict) was usually inappropriate to their objective family circumstances or the ability of the youngster" (14, p.135). Thus, Chein not only alludes to the commonality of broken homes as an antecedent of self-attitudes and addiction, he also identifies how the family produces circumstances which are "designed" to produce failure in achievement.

Self-theorists have repeatedly pointed to lack of successes as antecedent to negative self-concepts. When significant others (the parents) provide inconsistent recognition and acceptance and then provide a structure designed for lack of success, the result is negative self-attitudes on the part of the individual (the addict). Such a theme was identified in a study by Gerard and Kornestsky, who found aspiration-achievement discrepancies among the addict group they studied. "The addicts' families inculcated high levels of aspiration and expectation into them, yet failed to strengthen their capacities to attain their goals through realistic appraisals of their environments and acceptances of the need to work toward subordinate goals on the paths to more final objectives" (36, p.483).

The commonalities between predictions based on self-theory and families of addicts become quite clear. Just as a broken home, absence of father figure, inconsistent role presentation by mother, and a structure designed for failure seem to be typical characteristics of the addict's family, so are these same characteristics typical of the antecedents of negative self-attitudes.

Peer Patterns

Peers, as well as parents, are "significant others" from whom approval and acceptance are sought. Coopersmith (22, p.50) found that people with positive self-attitudes freely associate with large numbers of others and have many friends, but that those with negative self-attitudes are isolated. Individuals with negative self-attitudes move from persons to persons until they find others with the same negative self-attitudes. It is from such low self-esteemed peers that some low level of assurance and self-respect is gained. Coopersmith also points out that regardless of what particular peer group the person with low-esteem is trying to join, he will maintain a quiet and passive posture; those with high self-esteem will publicly express their opinions (22, p.52).

Rosenberg was also able to show that those with low self-esteem move from group to group looking for a group environment where they can be more comfortable (65, p.195). Like Coopersmith, Rosenberg argued that those with low self-esteem are less likely to arouse the respect and affection of others and are submissive or unassertive in their dealings with people (65, p.205).

The importance of peer associations in drug-taking activities cannot be overemphasized. Lawrence Kolb, in speaking of the contagious nature of narcotic addiction resulting from delinquent gang pressures writes, "Whether or not a boy can resist the pressures, values, and behaviors of the gang is determined by the boy's own inner values, his sense of identity with the future and the concern and support of his family and other friends" (45, p.67). Further, just as the person with low self-esteem drifts from group to group until he finds one with which he is not threatened, so does the addict. Isbell (41, p.887) discusses this concept, stressing that the addict gains recognition from the addict group. Within the group the individual finds a belonging. The group has its own language, customs, and codes. Isbell feels that it is almost impossible for an addict to leave the group, as he no longer has anything in common with other nonaddict groups. Any attempt to leave the group only produces more loneliness and boredom.

While Isbell wrote of the addict who has already become addicted, John P. Fort writes of the entrance into addiction, which he sees as having "important group ceremonial significance." The potential addict is profoundly lonely and isolated (as is the person with negative self-attitudes), an isolation which can be somewhat relieved by joining the separate world of addiction. Fort goes on to say that although the personal relationships within the addict group are tenuous and unsatisfactory, they may well be an improvement over what the individual was experiencing prior to addiction (35, p.89).

The same phenomenon is described by J. Evans; in fact, his description of the adolescent's being attracted to the drug-taking group is quite similar in words, as well as content, to Rosenberg's description of how the low self-esteemed individual moves from group to group seeking support and acceptance at his level: "The adolescent drug taker is attracted to the drug-taking group where they support and depend on each other and where they develop a subculture in which their self-esteem is satisfied" (27, p.372). He then quotes Eveloff's view that "He (the adolescent prior to addiction) searches for a group with similarly arrested development, where his own inadequacies will become just one unnoticed piece of the collective mosaic of psychopathy" (28).

The group selection process was also described by R. Clinard in his discussion of the sociology of deviant behavior. He saw addiction to narcotics as a consequence of a series of attempts to acquire status within peer groups. When youth fails to become integrated into groups which engage in socially accepted behavior, they turn to groups which participate in nonsocially acceptable behavior, such as drug addiction (19, pp.276-278).

The addiction peer group, it seems, offers the individual with negative self-attitudes acceptance, recognition, and even a means of status. The addiction component of the group's cohesiveness gives a language, a purpose, and a culture, but the primary reinforcement for membership lies in mutual recognition and acceptance provided each by the other.

Personality Patterns

The question of what is antecedent and what is consequence becomes even more salient when the personality patterns of the addict are compared with the personality patterns of those with negative self-attitudes.

Coopersmith has repeatedly declared that those with low self-esteem are more easily threatened by criticism than those with high self-esteem. As a defense to the threat of criticism, the low-esteemed individual becomes passive and isolated (22, p.65). Many of the same adjectives, passive-isolated-easily threatened, have already been cited in this section to describe the addict. Coopersmith continues by saying that those with low self-esteem have marked self-consciousness and preoccupation with inner problems; they become markedly preoccupied with their difficulties and they begin to search for quick (less threatening) means of relief (22, p.71).

Rosenberg followed a similar theme concerning the isolation and fear of criticism suffered by the persons with negative self-

attitudes. The Rosenberg study demonstrated that those with low self-esteem saw themselves as vulnerable and easily hurt by criticism, as awkward with others, as finding it difficult to initiate or engage in conversation, and as not being particularly liked by others, so that it was necessary to put up a "front" to other people (65, p.183). Again, Rosenberg could have as easily been describing a population of narcotic addicts. John Fort, for example, describes addicts as "introverted, sensitive, quiet, passive, and submissive (35, p.81); Leon Brill similarly states that the addicts seek drugs as an escape from loneliness, isolation, and boredom in their personal lives (11, p.12).

Addicts have traditionally been diagnosed as having a variety of neurotic, psychopathic, and sometimes, psychotic states; (84, p. 566; 79, p.36; 45, p.73; 41, p.888) such psychiatric diagnoses are consistent with empirical studies relating neurotic conditions to low self-esteem. Ruth Wylie reviewed nine studies which reported significantly lower self-regard for diagnosed neurotic patient groups when compared with normal nonpatients (85, pp.202-216). Wagner and Fitts have demonstrated that neurotic and psychotic psychiatric patients have lower self-attitudes than normal nonpatients (80). Reference to such studies (all of which were of a cross-sectional nature) is not intended to demonstrate causal relationships, but rather to suggest that these findings support a model of causality based on self-theory.

Other authorities, such as Laskowitz (49, p.83) and Fort (35, p.79), are less eager to place a psychiatric diagnosis on the addict, preferring to describe the behavior in terms of the "addictive personality." Nonetheless, their observations are congruent with self-theory; in fact, they seem to become more coherent when viewed from such a perspective. Laskowitz points out that addicts behave "as if there is a heightened sensitivity to the risk of failure and attendant loss of face. Interestingly it has been found that the addict's aggression is characteristically nonadaptive ... the addict mobilizes his energies in self-defeating endeavors" (49, p.70). Fort feels that to describe addicts as having psychopathic personalities has little usefulness. Rather he sees addicts as being mildly depressed, lonely, and isolated, with drugs providing a reduction to the intensity of addict self-doubts, fears, and guilt (35, p.89). Leon Brill (11, p.183) would be less inclined to drop the diagnosis but does see the addicts' drug use in a somewhat similar way. He states that the addict uses drugs as a means by which he can turn "self-defeating impulses" into a weapon against his family as well as against himself (11, p.18). Whether a psychiatric diagnosis is attached to an addict is of little importance in terms of this study. What is important are the similarities in the descriptions of both the individual with negative self-attitudes and the narcotic addict.

4. Addict Group Drug Use Patterns

The study addict subjects were selected from white middle socioeconomic narcotic addicts being treated under provisions of the Narcotic Addict Rehabilitation Act of 1966 (NARA). A review of the NARA program records revealed only 5 metropolitan areas having populations of white addicts numbering more than 50. Telephone conversations with the directors of the treatment agencies serving those areas quickly defined the two metropolitan areas of Minneapolis-St. Paul, Minnesota, and Seattle, Washington, as having appropriate caseloads from which to draw the sample. An equal number of addicts were selected from each area. Of the 70 patients selected from the NARA treatment agencies, all were subjected to the study design requirements of being:

1) a narcotic addict,

2) white,

3) of middle socioeconomic status, and

4) willing to participate in the study.

Each addict was matched with a nonnarcotic using control on the variables of race, sex, age, and socioeconomic status. In addition, the matching procedure tried to keep constant the exposure both groups had to "contagion" factors such as the prevalence of addicts in their communities or fad type drug experimentation in schools during the adolescent years.

Each addict interviewed was asked for the name of three friends who grew up with him, lived in the same neighborhood and/or attended the same school, were of the same sex, were within five years of his age, and came from about the same economic background, but did not use drugs. From the names provided by the addicts, it was possible to match each one with a nonnarcotic using control.

A detailed discussion of the subject selection process is presented in the Methodology section in the appendix.

Addict subjects were asked a series of questions concerning drug-related activities. To the extent that some similar data exist on other addict populations studied elsewhere, a limited amount of comparison could be made. The findings of such comparisons suggested that this study's population was not unlike other addict populations about which data exist. While there were sometimes variations between the two geographical locations of the addict groups, the variations were not of such magnitude as to suggest that either of the groups was unique or atypical when compared to other addict populations.

Drug Initiation Patterns

The addicts were asked, "At what age did you first use any drug for kicks? By drugs, I mean *any* drug other than alcohol, such as glue, pot, heroin, other opiates, or anything else." They were also asked what their initial experimental drug was. It was found that the mean age for such initial recreational drug use was 15.6 years in Washington and 14.4 years in Minnesota (difference not significant). In Washington the drug most often named as the initial recreational drug used was marihuana (42.9%); the second most frequently named initial drug was inhalants (17.2%). In Minnesota the pattern was just the opposite with inhalants in first place (31.4%) and marihuana following second (22.9%). Fifty-seven percent of the addicts from Washington and 34.3 percent of the addicts from Minnesota mentioned heroin as the first narcotic tried. The drug named second most frequently in Washington was morphine (28.6%); in Minnesota it was cough syrup with codeine (20.0%). Cough syrup was only mentioned once in Washington as the first narcotic used.* The addicts were asked, "About how long a period was it from the first time you used narcotics until you first became physically addicted (strung out)?" In both places the largest response category, 42.9 percent in Washington and 48.6 percent in Minnesota, was "less than one year."

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* This difference is interesting in that it supports the contention that drug use patterns are dictated both by the availability of drugs and by the influence of social/peer pressure. Testimony from numerous subjects and confirmation by police and treatment officials described the "syrup party" fad among high school aged youth in the Twin Cities area around the mid-sixties, the time during which most of the addict subjects were introduced to narcotics. Cough syrup with codeine could be purchased without prescription. Large quantities of the syrup were drunk by groups of youths in a social atmosphere similar to the more commonly seen "beer busts." Apparently, such activitiy was widespread in the Twin Cities high schools, especially in Roosevelt High School, a school which at least

In both locations, all of the addicts reported that they were introduced to drug use by friends or peers. The mean age for first narcotic use followed a similar pattern for the two locations, being a little later for Seattle, 18.3 years, compared to that for Minnesota, 17.7 years (nonsignificant).

Table 1 summarizes the data pertaining to drug initiation patterns discussed to this point.

When one reviews the literature of other studies of addict populations, it becomes apparent that this study's addict population had a pattern of drug initiation comparatively similar. The following profile of initiation patterns is drawn from the literature:

1) Addicts begin their drug history by experimentation with a nonnarcotic drug, usually marihuana or inhalants (3;24;38;45; 53).

2) The age of onset of nonopiate drug use is most often reported as near age 15; the age of onset of opiate drug use is most often reported as near age 17.

3) The narcotic drug most frequently used initially is heroin (18;24;47;83).

4) Once narcotic use is initiated it is used with increasing frequency until physical addiction takes place--usually in less than one year* (24;47;48).

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23 percent of the subjects attended (the exact percentage is not available due to incomplete data); in fact, one control stated that the entire Roosevelt football team was placed on probation one year for participating in cough syrup parties. An interesting variation between the two locations became apparent in the percentage from Minnesota (22.9%) who said they "played around with narcotics for two years or more" before becoming addicted when compared with the percentage from Washington (5.7%) who reported such a long experimentation before addiction. This report is correlated with the use of codeine syrup in Minnesota. Codeine generally is considered to have a lower addicting potential than other narcotic drugs.

* This reported finding is questionable, as there are inadequate data on those who tried narcotics without becoming addicted.

Table 1

Drug Initiation Patterns

	Washington Addicts	Minnesota Addicts
Mean Age of First Recreational Drug Use	15.6 (SD 4.9)	14.4 (SD 4.6)
Mean Age of First Narcotic Use	18.3 (SD 4.0)	17.7 (SD 4.6)
First Drug Tried	Marihuana	Inhalants
First Narcotic Tried	Heroin	Heroin
Introduced to Drug Use By	Friends	Friends
Introduced to Narcotic Drug Use By	Friends	Friends
Most Frequently Stated Length of Time from First Narcotic Use to Physical Addiction	< 1 Year	< 1 Year

Drug Use Pattern

The addict subjects were asked "What is the longest period you have ever been totally clean (abstinent) since the first time you became addicted? By clean, I mean free of anything except alcohol ... and you may count the times when you were in jail or in a treatment program." Ninety-two percent of the addicts from Washington and 88 percent of those from Minnesota stated that the time was less than one year. Twenty-two percent of Washington's and 14 percent of Minnesota's addicts gave the longest period without drugs as less than six months. Nine percent of the Washington addicts and three percent of those from Minnesota state they had *never* been totally free of drugs for a period of one week since they first became addicted. These data are especially interesting in that *all* of these patients had been previously treated for a period of months (usually six) in an inpatient facility which supposedly was maintained as a drug free environment.

The addicts were asked to describe their usual source of drug supply during the six months prior to entering the NARA treatment program. Table 2 shows that 74 percent of them used street drugs as at least one source of their drug supply. Street drugs, illegal, were differentiated from drug store, illegal, in that street drugs were those bought or purchased from pushers or friends and were of somewhat questionable identity and quality. Drug store, illegal, were those drugs obtained by such means as forging prescriptions and stealing from drug stores or physicians and which the identity and quality was usually known. In both locations addicts seemed to take pride in their use of "drug store stuff" as opposed to street drugs. Drug store, legal, represented drugs obtained across the counter by prescription. Addicts frequently delighted in revealing that they had a physician or a pharmacist who was keeping them in drugs. (About 10% of the addicts said they obtained at least some of their drugs in such a fashion.) Still another source of drug supply was legal methadone. In both locations, methadone maintenance programs had been in existence for several years. About 26 percent of the addicts were enrolled in such a program during the six month period prior to entering NARA.

Table 2

Stated Source of Drug Supply

	Percent Who Acknowledged Source as Drug Supply		
	Washington	Minnesota	Combined
Street Drugs, Illegal	86	63	74
Drug Store, Illegal	51	46	48
Drug Store, Legal	14	6	10
Methadone, Legal	23	29	26

Criminality and Drugs

The addicts were then asked whether their drug habit was *primarily* supported by legal or illegal means; 97 percent of the Washington and 91 percent of the Minnesota addicts stated that their drug habits were supported illegally. In order to learn more of the way in which the addicts supported their habits, the subjects were read a list of illegal activities and asked about their participation in the activity during a period of six months before NARA. Responses were grouped into three categories: daily, sometimes, and never. Table 3 reports the findings. It can be seen that the type of illegal activities in which the addicts participated was quite similar for both locations.

Addicts from Washington and Minnesota reported "selling drugs" most often as their daily means of support; in fact, only 15 percent of the combined addict groups stated that they never sold drugs.* In both groups, shoplifting was a common support method, as were burglary and theft. The more violent types of crimes, holdups and muggings, were infrequently reported as a

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* As a clinician, the investigator questions the veracity of this report. While selling illegal drugs is, without question, a popular means of support for addicts, there is also apparently some status gained among addicts for "pushing." Just as they often exaggerate their drug habit, so do they magnify their drugpushing skills.

Table 3

Participation in Criminal Behavior

	Reported Participation (Percent)								
	Daily			Sometimes			Never		
	Wash.	Minn.	Comb.	Wash.	Minn.	Comb.	Wash.	Minn.	Comb
Shoplifting	14	23	18	25	40	33	60	37	49
Prostitution or Pimping	6	9	7	15	12	14	80	80	80
Selling Drugs	51	37	44	31	49	40	17	14	15
Forging Prescriptions	6	9	7	17	20	18	77	71	74
Burglary/Theft	26	11	18	43	62	52	31	26	28
Gambling-Numbers	0	3	2	9	12	10	91	86	88
Writing Bad Checks	11	9	10	35	29	32	54	63	58
Holdups/Muggings	9	9	9	17	48	32	74	43	58

daily activity. Of those who did report that they sometimes participated in such violent crimes, the question was asked, "Did you carry a gun or other weapon?" Fifty percent of the Washington and 33 percent of the Minnesota group said they did carry a weapon. However, often those addicts also volunteered a qualifying remark such as, "It wasn't loaded, though" or "I wouldn't have used it." Thus the picture of criminal activity in which the addicts of this study participated gives support to the rather classical picture of a sneak thief and passive criminal who is seldom involved in violent crimes (50, p.25).

John C. Ball and Carl D. Chambers discussed criminality among addicts and concluded that, "Most but not all, of the addict population are engaged in criminal activities. Of 2,149 Lexington-Ft. Worth patients, 86.6 percent had been arrested prior to hospitalization. Still, 13.4 percent had never been arrested, and these addicts had been using opiates for 9.9 years!" (6, p.12). Their findings support the literature that narcotic addicts, for the most part, support their habits by illegal means (6;45;59;77; 79).

When this study group was asked about arrests other than traffic violations, 100 percent of the Washington and 97.1 percent of the Minnesota addicts' answers confirmed arrest records. When the matched nonaddicts were asked the same question, 40 percent (14) of the Washington and 48.6 percent (17) of the Minnesota group confirmed that they had been arrested. The mean age at which the first arrest occurred for both addicts and controls was younger in Minnesota than in Washington, as can be seen in table 4. A matched-pairs *t* test was conducted to see if the addict's age of first arrest came significantly earlier than his matched control. In Washington, such a hypothesis was confirmed; there were no significant differences between the Minnesota pairs. There seems to be no obvious explanation for this geographical difference. However, since both addicts and controls from Minnesota had an earlier age for first arrest, explanations relating to law enforcement tactics must be postulated. Different administrative policies as to juvenile offenses could explain the variation.

The subjects were asked if their first arrest was in any way drug-related (not including alcohol). Fifteen of the Washington and six of the Minnesota addicts described their first arrest as being associated with drugs. Of the nonusing subjects, three from Washington and two from Minnesota stated that their first arrest was drug-related. It was interesting to note that both of the Minnesota nonusers who admitted their first arrest to be drug-related, stated that they were with their (then nonaddicted) match at the time. In both (nonrelated) situations, the arrests occurred after or during gang activities where drugs were present within the group.

Table 4

Age of First Arrest

	No. Pairs	Mean Age	SD
Washington Addicts	14*	15.8	2.3
Washington Controls		18.1	2.6
Minnesota Addicts	16	14.6	3.03
Minnesota Controls		16.8	3.99

* Matched-pairs t test: t 3.201; $d.f.$ 13; $p < .05$

"Contagious" Factors

Isidor Chein et al. (16), Lucius Brown (12, p.43), as well as others, have discussed the influence of the community in which the addict is reared as having "contagious" characteristics in the etiology of addiction. There is no doubt that certain communities have higher incidence of addiction than others. Individuals reared in such addiction "hot spots" have greater exposure to opportunities for drug experimentation. Since both the addicts and their matched control were reared in the same communities,* the question arose as to what the two groups perceived as the number of existing addicts in their community. The subjects were asked, "In terms of the number of addicts in the community in which you grew up, would you say there were many addicts, more than in most communities; about the same as most communities; or fewer than in most communities?" If the community background variable had indeed been controlled, there should have been no difference between the two groups in the stated number of addicts in the communities in which they were reared. Table 5 shows the distribution of responses to the question. A matched-pairs analysis was done after the responses

* As discussed in the methodology section in the appendix, the variable of community background was controlled. However, since the means of control was the addict's subjective evaluation of the two groups' backgrounds, the probability of variation is quite large.

Table 5

Stated Number of Addicts in Community Where Reared*

Perceived Number of Addicts	Wash. Addicts	Wash. Controls	Minn. Addicts	Minn. Controls
More Than Most Communities	9	2	10	8
About the Same as Any Community	3	9	9	3
Fewer Than Most Communities	23	23	16	24

* A matched-pairs analysis of these data revealed no significant difference in the way the addicts and their matched controls described the addict population in their developmental community.

were dichotomized into: "the same or fewer than most communities" and "more than most communities." There was no significant difference in the way in which the addicts and their matched subjects described their developmental communities in terms of the presence of addicts.

Pursuing a similar theme that early exposure to addicts or other drug users might have some influence as to whether or not an individual becomes addicted led to the question, "About what age were you when you first, if ever, met a narcotic addict?" Table 6 gives the mean age stated for each group. It is interesting to note that, while in both locations the addicts gave significantly younger ages than their matched controls, the Minnesota addicts reported a significantly lower age for first meeting an addict than did the Washington addicts (t = 3.955; $d.f.$ = .33; $p < .001$).

Table 6

Reported Age at Which Subjects First Met a Narcotic Addict

	N Pairs	Mean	SD	t
Washington Addicts	32	17.96	1.96	2.04*
Washington Controls		18.81	2.83	
Minnesota Addicts	35	15.74	2.68	4.84**
Minnesota Controls		18.85	2.91	

* Matched-pairs t test $p < .05$ $d.f.$ 31

** Matched-pairs t test $p < .001$ $d.f.$ 34

Similar results were recorded when the subjects were asked, "Up until age 17, how many persons in your immediate family 'used' drugs? By used, I mean either abusing some drug or taking it more often than would normally be prescribed by a physician?" The assumption behind this question was that the addicts would have been more frequently exposed to drug use by significant others in the family during early developmental and modeling years than would the controls. Table 7 presents the findings that the addict group did report a greater number of drug users in the family than did their matched controls. The means,

however, were not significantly different when examined by the matched-pairs *t* test procedure.

Table 7

Reported Number of Drug Users in Family Up to Age 17*

	N Pairs	Mean	SD
Washington Addicts	35	.37	.731
Washington Controls		.11	.323
Minnesota Addicts	35	.31	.583
Minnesota Controls		.17	.382

* Matched-pairs *t* tests showed no significant difference in either location between the addicts and the controls as to the reported number of drug users in their families.

A companion question was also asked about the number of alcoholics or problem drinkers in the subjects' families during developmental years. In both locations the addicts reported a greater number of problem drinkers, but a matched-pairs *t* test revealed the differences to be nonsignificant. Table 8 presents the matched-pairs data. The findings are similar to those of Isidor Chein whose New York study of narcotic addicts and controls reported alcoholism as more frequent in delinquent-producing families when compared to nondelinquent controls. However, when Chein compared addicts with nonaddict delinquents, no significant difference was found (77, p.53).

George Stevenson (74, p.51), in his study of delinquent addicts and delinquent nonaddicts in Vancouver, found that addicts used alcohol at an earlier age and more intensively than did nonaddicts. Chein found similar results in New York (17, p.67). When this study's subjects were asked at what age they started to "drink to get high?", a significant difference was found. Addicts from both geographic areas reported a younger age than did their controls at which they started to drink to get high. The data in table 9 give support to both Stevenson's and Chein's work. However, no evidence exists that alcohol plays a predominant

role in the development of narcotic addiction. The younger age at which the addict group started to drink seems to suggest an earlier proclivity for chemical gratifications.

Table 8

Number of Alcoholics or Problem Drinkers in Family Up to Age 17*

	N Pairs	Mean	SD
Washington Addicts	35	.71	.825
Washington Controls		.51	.702
Minnesota Addicts	34	.74	.710
Minnesota Controls		.47	.662

* Matched-pairs *t* tests showed no significant difference in either location between the addicts and the controls as to the reported number of problem drinkers in their families.

Table 9

Reported Age When First Started to Drink to Get High

	N Pairs	Mean Age	SD
Washington Addicts	30*	14.8	3.08
Washington Controls		16.3	1.83
Minnesota Addicts	24**	14.4	1.97
Minnesota Controls		15.6	2.43

* Matched-pairs *t* test $t = 2.74$ $d.f.$ 29; $p < .05$

** Matched-pairs *t* test $t = 2.00$ $d.f.$ 23; $p < .05$

5. Measurement of Self-Attitudes

The first major hypothesis that measures of self-attitudes will distinguish between subjects who are narcotic addicts and those who are not, was tested by comparing both groups on a number of measures, including the Tennessee Self-Concept Scale, the Rosenberg Self-Esteem Scale and selected Expression of Self-Attitudes (self-appraisal statements and responses drawn from the literature).

The Tennessee Self-Concept Scale

Although various measures of self-attitudes were employed in this study, the TSCS is the single most important index of the subjects' self-attitudes used. The TSCS was selected for such analysis not only because of the scale's reliability and validity (described in the appendix), but also because normative data exist for the scale.

The initial step in testing the first major hypothesis (measures of self-attitudes will distinguish addicts from nonaddicts) was to compare the mean TSCS score of the controls with that of the norms. Table 10 shows the scores the subjects obtained on the TSCS. While the Washington control group did not differ significantly from the normative data, the mean self-attitude score of the Minnesota control was significantly higher than that of the norms: $t = 2.09$, $d.f.$ 659, $p < .05$. Table 10 also shows that when the two groups were combined, there was no significant difference between the scores of the controls of this study and of the normative data. In view of the fact that there was no significant geographical variation between the two control groups and that the combined control subjects did not differ from the normative data, it was interpreted that there was no difference between the controls' score and that of the norms.

The subsequent step in testing the initial hypothesis was to compare the mean score of the addicts with that of the norms. If the mean self-attitude score of the addicts was significantly lower than that of the norms (and simultaneously with that of

the controls), one measure of self-attitudes would support the initial hypothesis.

Table 10

Mean TSCS Scores of Controls as Compared to Normative Data

	N	Mean	SD
Norms	626	345.57	30.70
Wash. Controls	35	350.94	26.54
Minn. Controls	35*	356.74	29.72
Combined Controls	70	353.84	28.12

* $t = 2.098$; $d.f.$ 659; $p < .05$

Rather dramatic differences were obtained when the addict TSCS self-attitude score was compared with that of the norms. Table 11 points out that both the Washington and Minnesota addicts had scores significantly lower than the normative data--$t = 7.119$, $d.f.$ 694, $p < .001$. The data of the two addict groups were then compared for geographical variation, and it was found that there was no difference in the mean scores of the two ($t = 1.37$; $d.f.$ 68, p = N.S.).

Table 11

Mean TSCS Score of Addicts as Compared to Normative Data

	N	Mean	SD	t
Norms	626	345.57	30.70	
Wash. Addicts	35	310.03	44.18	6.488*
Minn. Addicts	35	323.54	37.61	4.078*
Combined	70	316.78	40.91	7.119*

* $p < .001$, $d.f.$ 659 and 694

Matched-Pair Comparison

Each area was studied separately using the matched-pair *t* test procedure. In Washington the result of comparing the addicts' mean score with that of their matched controls was $t = 4.39$, $d.f.$ 34, $p < .01$; in Minnesota, the result was $t = 3.92$, $d.f.$ 34, $p < .001$. Interpretation of these data provided additional support to the first hypothesis. The addicts from both cities had significantly lower self-attitude scores than did their matched controls.

Wilcoxon Matched-Pairs Test

Self-attitude measurements have thus far been subjected to parametric statistical analysis. Since there might be some question as to the appropriateness of using the *t* test procedure for these data,* a nonparametric test was employed to examine the differences in the rankings of the matched pairs.

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* The use of parametric statistics assumes that certain conditions have been met with the data under analysis. For example, the following *t* test requirements must be met before any confidence can be placed in the resultant probabilities:
    1) The observation must be independent.
    2) The observation must come from a normally distributed sample.
    3) The populations must have the same variance or a known rate of variance.
    4) The variables involved must have been measured on *at least* an interval scale.
    5) The means must be linear combinations of effects due to columns and/or rows; they must be addictive (71, p.19).

  There seems to be some agreement that *slight* deviations from the above requirements are permissible without having radical effects on the probability figure, but there is as yet no agreement as to what constitutes a "slight" deviation (71, p.35).

  The question pertaining to this study is that of assessing whether or not the TSCS scores met the requirements of the parametric *t* test. The answer is a qualified yes. One certainly should question that the TSCS meets the requirement of being at least an interval scale. Just as the I.Q. as a measure of intelligence is not an interval scale, neither is the TSCS an interval scale. Just as a person with an I.Q. of 100 is not twice as intelligent as a person with an I.Q. of 50, a person with a TSCS score of 400 does not have self-attitudes twice as positive as a person with a score of 200. While neither I.Q. nor TSCS can be considered an interval scale, both do show order and both do give an indication of distance.

This procedure, the Wilcoxon Matched-Pairs Signed-Rank Test, utilizes information concerning the direction of differences between pairs and the magnitude of that difference. In other words, the test makes use not only of whether the control scores are higher or lower than the addict but also of the rank of those differences. The power-efficiency of the Wilcoxon test compared with that of the *t* test (when the assumptions of the parametric *t* test are met) is equal to 95.5 percent (71, p.83).

The null hypothesis that there would be no difference between the TSCS scores of the addicts and their controls was established for both locations. In both locations it had to be rejected with the conclusion that the addict group had lower scores than their matched controls. When the Washington pairs were submitted to analysis, the value of z was 3.86 with $p < .001$. The Minnesota pairs yielded similar findings: $z = 2.35$; $p < .005$. The results of the Wilcoxon test confirmed the findings of the *t* test procedure and provided additional support to the first major hypothesis that self-attitude will distinguish between addicts and nonaddicts.

Distribution of TSCS Scores

The formulations of self-theory prescribe behavioral expectations both preceding, and resulting from, specific levels of self-attitudes. The boundary lines between positive, neutral, or negative self-attitudes are quite arbitrary; however, some demarcation is usually made. Arbitrary category boundaries were defined for purposes of this study.* When the frequency distribution of these categories was examined, additional support was given to the hypothesis that the measures of self-attitudes would distinguish addicts from nonaddicts. Table 12 shows that only 4 of the total addicts had positive self-attitudes compared with 22 of the controls. Further, 35 of the addicts had negative self-attitudes as compared with only 8 of the controls.

Association Between Self-Attitudes and Addiction

The TSCS measurement data presented clearly support the hypothesis that the levels of self-attitudes will distinguish between those who are narcotic addicts and those who are not. The

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* The TSCS Score takes on a normal distribution so that it lends itself to defining category limits. It was arbitrarily determined that a grouping of plus or minus .75 standard deviations (approximately 50 percent of cases around the mean) would represent "neutral" (medium) self-attitudes; scores higher than .75 *SD* below the mean would be negative (low). Making use of Fitts' normative data, it was determined that the following limits would define the boundaries of self-attitudes: negative 0-322; neutral 323-368; and positive 369 and above.

Table 12

Distribution of TSCS Scores by Location and Self-Attitude Dimension

	Controls (N=35)			Addicts (N=35)		
	Wash.	Minn.	Total	Wash.	Minn.	Total
Positive	10	12	22	2	2	4
Neutral	21	19	40	12	19	31
Negative	4	4	8	21	14	35

Wash. Controls/Wash. Addicts: $X^2 = 19.35$; $p < .001$

Minn. Controls/Minn. Addicts: $X^2 = 12.70$; $p < .001$

Addicts/Addicts and Controls/Controls: N.S.

observable differences were further verified by examining the association between the measures of self-attitude and the presence or absence of addiction. The Yule's Q statistic was used to determine the strength of the association.

Yule's Q is a procedure for examining the relationship of dichotomous variables and as such, the trichotomies of the previous discussion (positive, neutral, negative) had to be reduced. Since the underlying assumption of the analysis is that there is an inverse relationship between self-attitude levels and the probability of becoming an addict, the independent variable becomes negative self-attitudes. Anything that is not negative, that is, neutral or positive, becomes the opposing side of the dichotomy. Table 13 shows the frequency distribution using the two categories of self-attitude as compared to the presence or absence of addiction.

It is to be noted that fully 50 percent (35) of the addicts had negative self-attitudes whereas only 11 percent (8) of the nonaddicts had negative self-attitudes. When this distribution is analyzed using Yule's Q, the results are $Q = -.797$, which is interpreted (using the Davis table of convention for describing Q values (23, p.49)) as "a very strong negative association." Thus, it can be said that for these data there is a very strong negative correlation between self-attitudes and addiction.

Table 13

Distribution of TSCS Scores
by Dimensions

	(+) Addicts	(-) Nonaddicts	Total
Non-Negative TSCS Score (+)	35	62	97
Negative TSCS Score (-)	35	8	43
TOTAL	70	70	140

The Rosenberg Scale

The Rosenberg scale was included in this study to provide a validity check. The scale was easy and quick to administer and has established validity and reliability (see appendix, Methodology). Since there are no normative data for the scale, its use

in this study was limited to testing the first major hypothesis, serving as an additional measure of self-attitudes.

Mean Differences

Since there are no normative data for the Rosenberg Scale, it was not possible to assess how the subjects compared to an expected outcome. In the case of the TSCS, the matching of addict and control prevented the comparison of addict scores with the controls. It was possible, however, to determine the mean score for each group and simply state it as a descriptive statistic. Table 14 shows that the addicts from both locations had lower mean scores on the Rosenberg scale than did the controls.

Table 14

Mean Scores Obtained on Rosenberg Scale

(Range 0-6)

	Mean	SD	N
Wash. Addicts	3.60	1.78	35
Minn. Addicts	3.94	1.47	35
Wash. Controls	5.09	.92	35
Minn. Controls	4.97	1.17	35

As in the case of the TSCS scores, it was important to determine differences in the mean score results from the Rosenberg Scale which could be attributed to geographical variation. The mean score of the addicts from Washington was compared with that of the addicts in Minnesota by using the Student's t procedure; no significant differences were found. Similarly, the Washington controls did not differ significantly from their Minnesota counterpart.

Wilcoxon Matched-Pairs Test

The Wilcoxon Matched-Pairs Signed-Ranks Test was also conducted on the Rosenberg data. The reasons for using the nonparametric statistic were the same as with the TSCS data (see p. 33). In both locations, the addicts had lower scores than their matched controls. When the Washington pairs were submitted to the Wilcoxon analysis, the z value was 2.35 and a $p < .005$; the Minnesota pairs had a z value of 3.11 and a $p < .001$; the null

hypothesis that there would be no difference was rejected. Thus the Rosenberg scale provided another measure of self-attitude which confirmed the earlier findings of the TSCS data. The first major hypothesis was again supported.

Expressions of Self-Attitudes

A number of items of information were obtained from theoretical constructs to offer still another index of the subjects' self-attitudes. These additional measures of self-attitudes consisted of a series of five self-appraisal statements solicited from the subjects which the literature described as consistent with prescribed self-attitude dimensions. Such "expressions of self-attitudes" were examined with full awareness of their limited validity and reliability. The importance of self-attitude expressions in this study is of a descriptive nature. The five factors examined relate to the addicts':

1) ability to make decisions ("How good would you say your ability is to make decisions about new situations?");

2) sensitivity to criticism ("How strongly do you react to criticism?");

3) posture on controversy ("In regard to your opinions about controversial issues such as politics or religion, which of the following ("no opinion" to "outspoken") best describes you?");

4) relationships with others the same age ("How would you generally describe your relationship with others your same age at this particular time?");

5) ability make and keep friends ("About how many close friends do you have and of these how many have been close friends more than a year?").

The expressions were examined in two ways: first, to see if they were associated with the TSCS measure of self-attitudes, and second, to see if they would support the first major hypothesis. All five of the expressions were associated with levels of self-attitudes; however, only two of the expressions gave support to the initial hypothesis by distinguishing the addict group from their nonaddict pairs. These two expressions were the reported ability to make decisions and the reported sensitivity to criticism.

Ability to Make Decisions

Theory suggests that the way in which one views his decision-making ability might well be another index of his self-attitudes

dimension (22, p.23). The subjects were asked, "How good would you say your ability is to make decisions about new situations?" Response choices were: "better than most people; about as good as most people; and not as good as most."

To test the hypothesis that perceived decisionmaking ability is another index of self-attitude dimensions, the way in which the subjects responded to the question was compared to their score on the Tennessee Self-Concept Scale. The data in table 15 indicate that the group whose members saw themselves as having "better than most" decisionmaking ability also had the highest TSCS scores. Similarly, those who saw their ability as "about as good as most" had intermediate TSCS scores, and the group who perceived their ability to make decisions as "not as good as most" had the lowest TSCS scores. Students' *t* statistic revealed significant differences between the mean of those who responded as "not as good as most" and Fitts' normative data ($p = < .001$). The other two groups yielded no significant differences. The results in table 15 can be interpreted as giving some support to the contention that subjects' stated decisionmaking ability is an index of their self-attitude dimensions.

Table 15

Stated Decisionmaking Ability
Compared to TSCS Scores

Perceived Ability	N	Mean TSCS Score	SD
Better Than Most	43	357.3	28.6
About as Good as Most	80	336.0	29.9
Not as Good as Most	17	276.2*	46.5

* When compared with Fitts' normative data: Mean 345.57; *SD* 30.70; *N* 626; Students' *t* value was 9.08; *d.f.* 641; $p < .001$.

The next analysis procedure was to determine if perceived decisionmaking ability (an "index" of self-attitudes) would conform to the first major hypothesis that measures of self-attitudes would distinguish between addicts and nonaddicts. A hypothesis was established that addicts would, more frequently than the controls, categorize their decisionmaking ability as "not as good as most." Since the hypothesis is that the difference between addicts and nonaddicts is the addicts' more frequent negative

self-attitudes and the controls' positive self-attitudes, the three response categories were dichotomized into "not as good as most" and "as good or better than most."

Table 16 shows that the data do support the hypothesis. In both locations, addicts more frequently than controls stated that their perceived decisionmaking ability was not as good as most. There were no geographical variations between the two addict groups or between the control groups.

Table 16

Distribution Between Addicts and Controls as to Their Perceived Decisionmaking Ability (Percent)

	Controls		Addicts	
Perceived Ability	Wash.	Minn.	Wash.	Minn.
As Good or Better Than Most	100	100	68.6	82.9
Not as Good as Most	0	0	31.4	17.1
TOTAL	100	100	100.0	100.0
Washington controls/Washington addicts			X^2 10.79	$p < .005$
Minnesota controls/Minnesota addicts			X^2 4.56	$p < .05$

Finally, the McNemar pairs X^2 test was used to examine the data to determine if perceived decisionmaking ability would consistently distinguish the addict from his matched nonaddict. In both locations, the addicts more frequently perceived their decisionmaking ability as "not as good" than did their matched control: Washington $X^2 = 4.16$; $p < .05$; Minnesota $X^2 = 9.09$; $p < .005$. This again supports the hypothesis that this "self-attitude expression" will distinguish between addict and nonaddicts.

Sensitivity to Criticism

Rosenberg asserted that since the "sentiment of self-regard is important to the emotional life of an individual, it can be assumed that negative self-opinions are rarely accepted with equanimity. Hence, we would expect the person with low self-esteem (self-attitudes) to be inordinately sensitive to any evidence in the experience of his daily life which testified to

his inadequacy, incompetence or worthlessness" (65,p.157). Rosenberg has shown that people with low self-esteem are "much more likely to be sensitive to criticism ... much more likely to be bothered if others have a poor opinion of them ... much more likely to be disturbed if they do poorly at some task they have undertaken ... and much more likely to be disturbed when they become aware of some fault or inadequacy in themselves" (65, p.158). Coopersmith (22, p.67) found similar results in his study. He concludes that "persons with low self-esteem are particularly vulnerable to unfavorable opinions and are fearful of evoking anger. They are apparently greatly distressed by either conflict or personal rejection," and, therefore, more sensitive to criticism.

The study subjects were asked to respond on a four point scale to the question, "About how strongly do you react to criticism?" Responses were later reduced to dichotomies of "mild reaction" and "strong reaction." It was hypothesized that those subjects who stated their reaction as strong would have lower TSCS scores than those who stated their reaction as mild. As table 17 demonstrates, the hypothesis was confirmed. The mean TSCS score of those who stated their reaction as strong was 13.5 points lower than those who had mild reactions, and was 11.7 points lower than Fitts' normative data; t 6.32; $d.f.$ 708; $p < .001$. The TSCS score of those who described their reaction to criticism as mild did not differ from the norm data.

Table 17

Subjects Stated Reaction to Criticism
Compared to Mean TSCS Scores

Stated Reaction	N	Mean TSCS Score	SD
Strong	84	323.8*	54.9
Mild	56	347.3	32.9

* When compared to Fitts' normative data: Mean 345.57; SD 30.70; N 626 the Students' t value was 6.32; $d.f.$ 708; $p < .001$.

The next logical step, then, was to see if the subjects' stated reaction to criticism would distinguish between addicts and nonaddicts. A frequency distribution of how the addicts and controls responded was determined and examined by chi-square procedures. There was no geographical variation in the way the two addict groups responded or in the way the two control groups

responded. Table 18 presents the result of the X^2 examination and confirms the first major hypothesis. In both locations, addicts, more frequently than controls, reported that their reaction to criticism was strong, and in both locations, the nonaddicts more frequently reported a mild reaction to criticism.

When the McNemar matched-pairs procedure was incorporated to examine the difference between the addicts' and their nonaddicts' matches, the results confirmed the hypothesis that the expression would distinguish addicts from nonaddicts, (X^2 = 10.99; *d.f.* 1; $p < .001$).

Table 18

Distribution Between Addicts and Controls of Stated Reaction to Criticism (Percent)

Sensitivity to Criticism	Controls		Addicts	
	Wash.	Minn.	Wash.	Minn.
Strong	58.0	40.0	74.3	74.3
Mild	42.0	60.0	25.7	25.7
TOTAL	100.0	100.0	100.0	100.0

Washington controls/Washington addicts $X^2 = 4.54$ $p < .05$

Minnesota controls/Minnesota addicts $X^2 = 7.06$ $p < .05$

6. Measurement of Pre-Addiction Variables

In the preceding chapter it was disclosed that addicts more frequently than nonaddicts have negative self-attitudes. The immediate question raised by such a finding is whether or not these negative attitudes occurred before or after the onset of addiction. Since it is not possible to reconstruct the past, a broad retrospective assumption was made--if self-attitude antecedents and early self-attitude perceptions distinguish addicts from nonaddicts, then in all likelihood, these negative self-attitudes preceded addiction.

The subjects provided self-reports concerning conditions, circumstances, and experiences which, according to the literature, either had antecedent influence--leading to prescribed levels of self-attitude--or could be conceived as an index of earlier self-attitude levels. This information was used to ascertain whether the addicts had negative self-attitudes prior to addiction.

This chapter reports on 31 variables suggested in the literature as being either antecedent to, or indices of, the self-concept. Many of these variables were closely related in content and in all probability were indices of the same or similar constructs. Nonetheless, of the 31 variables reported, a statistically significant 75 percent successfully distinguished addicts from nonaddicts. In every instance, there was no geographical variation in the way the two addict groups or the two control groups responded. That a significant number of antecedent variables were able to discriminate addicts from nonaddicts, gave support to the contention that addicts possess negative self-attitudes prior to addiction.

The childhood experiences described develop a background profile of the WMSES addict. Although little similar data exist about addicts in general, it appears that the WMSES addict has some unique background traits.

A self-perceived profile sketch of the childhood of the WMSES addict of this study would describe a child whose natural parents were married and living together but who were not compatible. These parents failed to provide much attention, affection, and recognition for their child, and were perceived as providing neither love nor trust. The father, more frequently than the mother, was seen as showing little affection; in general, the addict did not like his father. Limit-setting by parents was often slight; when punishment was administered, it was inappropriately harsh.

The addict was dissatisfied with himself as a child, did not get along with his childhood peers, and disagreed with the views and opinions of significant others, such as parents and teachers. Even during early childhood he perceived himself as not meeting the expectations of those significant others. He came from a family with siblings but did not see the sibling relationship as cohesive. He described his home life as unpleasant; in fact, he desired to leave home at an early age.

Antecedent Variables

To test the hypothesis that antecedent variables would distinguish addicts from nonaddicts, a matched-pairs analysis was performed. The responses provided by addicts were compared with the responses of their matched controls, and measurements (p) of the significance of the differences were obtained. Table 19 reports a summary of the matched-pairs analyses of the 31 variables.

The following antecedent variables successfully distinguished addicts from nonaddicts:

A. Family Structure

1. Controls more frequently than addicts reported having compatible parents.

2. Addicts more frequently than controls reported living with someone other than their natural parents during childhood. However, there was no difference between addicts and controls in reported frequency of severed marriages of their parents.

3. It was assumed that subjects who had an unhappy or unfulfilling home life would want to leave home at an earlier age. The addicts reported a significantly earlier age at which they first wanted to leave home than did the controls.

Table 19

Summary of Antecedent and Self-Perception Variables

Antecedent Variables	Geographical Variations	Distribution of Responses or Mean Values (percent)		Difference Between Addicts and Matched Controls
		Addicts	Controls	
Only child	None	6	6	NS
Parents married and living together	None	69	81	NS
Lived with parents	None	68	84	$p < .05$
Compatible with parents	None	34	77	$p < .001$
Age first wanting to leave home	None	15	17	$p < .01$
Perceived mother's love	None	44	79	$p < .001$
Perceived father's love	None	22	46	$p < .05$
Liked mother	None	79	99	$p < .05$
Liked father	None	58	93	$p < .001$
Mother knew most of subject's friends	None	47	86	$p < .001$
Parents interested in school	None	44	80	$p < .001$
Parents attended school activities	None	28	59	$p < .001$
Family ate together	None	80	80	NS
Mealtime pleasant	None	32	64	$p < .001$
Sibling cohesiveness	None	44	78	$p < .001$
Met expectations of significant others	None	low scores	high scores	$p < .05$
Agreement with significant others	None	low scores	high scores	$p < .05$
Average or above grades	None	47	68	$p < .05$
Participation in school activities	None			NS
Salaried work in high school	None	69	74	NS
Main source of income, jobs	None	44	67	$p < .05$
Many limits set by mother	None	49	72	$p < .05$
Many limits set by father	None	61	60	NS
Curfews on weekends	None	78	94	$p < .05$
Punishment appropriate	None	55	81	$p < .05$
Perceived trust by mother	None	40	88	$p < .001$
Perceived trust by father	None	27	89	$p < .001$
Self-satisfied as child	None	38	84	$p < .001$
Good relationship with childhood peers	None	70	91	$p < .05$
Liked by siblings	None	81	92	NS
Perceived by self as being smart as child	None	43	40	NS

B. Affection, Acceptance, and Recognition from Significant Others

1. Controls more frequently than addicts perceived a loving mother and father.

2. Controls more frequently than addicts reported that they liked their mothers and fathers during childhood.

3. Controls more frequently than addicts reported that their mothers knew most of their childhood friends.

4. Controls more frequently than addicts reported parents as interested in their academic performance.

5. Controls more frequently than addicts reported that their parents usually attended school events.

6. Controls more frequently than addicts described mealtime during childhood as pleasant and communicative.

7. Controls more frequently than addicts described childhood cohesiveness among their siblings.

8. Controls more frequently than addicts felt they met the expectations of their parents and teachers during childhood.

9. Controls more frequently than addicts stated that they generally agreed with their parents during childhood.

10. Controls more frequently than addicts reported they generally agreed with the views of their teachers and classmates during childhood.

C. School and Employment Successes

1. Controls more frequently than addicts reported above average grades in high school.

2. The number of reported close friends during high school was significantly higher for the controls than for the addicts.

3. There was no difference in the frequency in which addicts and controls reported they held salaried part-time work during high school. When asked about main source of their income during high school, controls more frequently than addicts said that part-time employment was the source.

D. Limit-Setting by Parents

1. Controls more frequently than addicts reported having weekend curfews.

2. Addicts more frequently than controls reported their mothers overreacted to the situation in prescribing punishment.

3. Both the addicts and controls more often reported their fathers than mothers as being overreactive when administering punishment. However, fathers' punishment methods did not distinguish addicts from controls, as was the case in the description provided for mothers' punishment methods.

4. Controls more frequently than addicts reported they thought their parents trusted them during childhood.

The early self-attitude indices which successfully distinguished addicts from controls are listed below:

1) Controls more frequently than addicts reported self-satisfaction as children.

2) Controls more frequently than addicts reported that they had good or excellent relationships with their peers during childhood.

All of the antecedent and index variables were examined to see if there were any differences in the responses provided between the two addict groups and the two control groups which would be explained by geographical variation. None of the variables demonstrated such a variation.

7. Conclusions

This study has identified some group differences within a population of WMSES subjects and has shown that these differences were able to discriminate within the population on a behavioral outcome variable (addiction). From an epidemiological standpoint, the study suggests some important issues and implications.

One major issue relates to the reliability of the findings. A larger study needs to be undertaken to be certain that the results can be duplicated. Ideally, the study population should also enable the researchers to control for ethnic and/or SES variation.

Validity and, in part, reliability of measurement have generally limited the acceptance of studies of the self-concept.* Self-attitudes are individual valuations and, as such, are private and not easily measured; further, such attitudes are subject to response sets and defense postures. Trying to understand an individual's attitudes from an external frame of reference, such as test data or observation, is seldom satisfactory from a validity standpoint. Still, the findings of this study are consistent with other studies of self-attitudes. The finding that group differences were able to distinguish addicts from nonaddicts implies the need for further study of differences and how they may be modified to influence the outcome (addiction).

An equally important issue is concerned with relative risks. Merely having negative self-attitudes does not imply that addiction will follow, so the question becomes, what is the relative risk of those with negative self-attitudes becoming addicts compared to those without negative self-attitudes? This question should be answered on the basis of a prospective study. For example, a large population of nonaddict adolescents could be tested for self-attitude dimensions and then followed for a

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* Ruth Wylie's book, *The Self-Concept* (1961), is concerned with the problems related to measurement validity and reliability of the self-concept.

period of time to determine the ratio of those with negative self-attitudes who become addicts, to those with positive self-attitudes who become addicts. However, since prospective studies are expensive, time consuming, and administratively difficult, it is not likely such a relative risk estimate will be forthcoming. In the absence of a prospective study, retrospective data can provide an *approximation* of the relative risk. Again, a large population needs to be examined in which the comparisons are based on the assumption that the controls are representative of the population from which the addicts are drawn.

To learn that WMSES addicts have more negative self-attitudes than WMSES nonaddicts has important rehabilitation implications, but from the public health standpoint of primary prevention, even more needs to be known. For example, the attributable risk is the rate of disease (addiction) which can be attributed to exposure (negative self-concepts). That is, a certain proportion of subjects could be expected to become addicts even though they did not have negative self-concepts. The attributable risk measure is obtained by substracting the rate of the disease (addiction) among nonexposed (not negative self-concepts) from the corresponding rate among the exposed (negative self-concept); the assumption being that any other causes of the disease had equal effect on the exposed and nonexposed groups.

These epidemiological issues suggest that efforts focused at improving preadolescents' self-attitudes may have an effect on the incidence of narcotic addiction. But, because of the association of the self-concept and other disorders,* it could be argued that more needs to be known about the association of negative self-attitudes and addiction before any prevention programs based upon self-theory should be initiated.

Researchers such as Gerald Caplan, however, would argue that one need not wait for full knowledge of etiological associations. He points out that primary prevention can have some success even with less-than-perfect knowledge of the factors influencing the incidence of mental disorders. Caplan offers a model of primary prevention which could easily be adapted to self-theory. His model is based on the assumption that individuals must have a continual "provision of supplies" which is commensurate with their current state of growth and development. Caplan sees these supplies as physical, psychosocial, and sociocultural in nature

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* There is some evidence showing that negative self-attitudes are associated with such disorders as alcoholism, juvenile delinquency, and sexual deviancy. Fitts summarizes some of the work done in such related fields (33, pp. 9 to 12).

(13, p.30). He sees primary prevention in terms of helping individuals who, because of lack of adequate supplies, are at high risk of mental disorder. Those without adequate supplies are less able to resolve crisis situations in ways acceptable to their society, their culture, or to themselves. Caplan's model includes identifying individuals who are high risk and, through family, community, or professional intervention, making efforts to provide the needed supplies.

Even without further expansion of the Caplan model, the implications for self-theory and drug addiction seem apparent. In fact, in view of the findings of this study, it is suggested that it is only through primary prevention procedures that any reduction in the disorder's occurrence will be seen. Even with early identification of the disorder, secondary prevention--the successful rehabilitation of narcotic addicts--is difficult.

The addict's resistance to secondary prevention is a complex problem which is deeply interwoven in the social structure (8;20), the legal system (52), and the proficiency of the treatment agency (10). This study hints at still another obstacle to secondary prevention. If drugs are in some way providing sustenance to the addict's self-image (27), resistance to giving up the drugs will be strong. It has been suggested that self-attitudes are persistent, changing little over the years (pp. 9 and 11). If this is true, it seems quite unlikely that success in rehabilitating addicts will increase dramatically, certainly not unless more effort is devoted to improving the addict's self-concept.*

Given that limitations of the current etiological knowledge of narcotic addiction would prevent any broad-scale primary prevention program founded on self-theory, the Caplan model suggests that some public health/mental health primary prevention approaches might yield favorable effects on the incidence of drug addiction. The objective of such a program would be to reduce the prevalence of negative self-concepts among preadolescents. This could be achieved, again borrowing from Caplan, by a combination of two approaches, "social action" and "interpersonal action." In either case, the aim would be to "ensure the adequate provision of basic supplies to members of a population and to help them deal constructively with their developmental and accidental crises" (13, p.56). The social action approach would focus on changing legislative mandates, educational systems, social policies

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* This is not to say that self-attitudes will not change. Rosenberg (65, Chapter I) goes to great length to show the similarities between self-attitudes and other object attitudes. Attitudes do change, but since they are an anchor for the individual--a readiness for action--they do resist change.

and the like. Interpersonal action focuses on individuals and small groups (for example, working with mother-child relationships or child-peer experiences).

Outlining a program for primary prevention based on self-theory is beyond the purpose of this paper; however, the implications seem clear. If, as this study suggests, drug addiction has its etiological roots in the self-concept, then it is through such an approach that the disorder's incidence might be reduced. Social changes, educational efforts, early case-finding, crisis intervention, and the like, all could become a part of the primary prevention effort.

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APPENDIX

Methodology

The Study Population

Subject Selection

The study addict subjects were selected from white middle socioeconomic narcotic addicts being treated under provisions of the Narcotic Addict Rehabilitation Act of 1966 (NARA). Guided by study design preferences and administrative dictates, the following considerations went into the selection of the geographical areas to be used:

1) The areas had to have a large enough population of subjects who would fit the definition of white middle socioeconomic status narcotic addicts (WMSES) so that a sample of more than 30 addicts could be selected.

2) The two geographical areas had to be located far enough from each other to warrant geographical comparisons at the time of data analysis. An arbitrary 1,000-mile minimal distance was used for the proximity of the two areas.

3) The NARA treatment agency serving the area had to be willing to cooperate with the investigator during the time of data collection.

A review of the NARA program records revealed only 5 metropolitan areas having populations of white addicts numbering more than 50. Telephone conversations with the directors of the treatment agencies serving those areas quickly defined the two metropolitan areas of Minneapolis-St. Paul, Minnesota, and Seattle, Washington, as having appropriate caseloads from which to draw the sample. An equal number of addicts were selected from each of the areas. Since the Minneapolis-St. Paul area had the smaller total caseload, a sample was selected from that area first as a test to see if the desired study number could be obtained. All of the patients from the three NARA treatment agencies were subjected to the study design requirements of being:

1) a narcotic addict,

2) white,

3) of middle socioeconomic status, and

4) willing to participate in the study.

The Minnesota Subjects

Three agencies in the Minneapolis-St. Paul metropolitan area are NARA contract agencies--The Catholic Welfare Services of Minneapolis, The Catholic Family Services of St. Paul, and the Division of Vocational Rehabilitation, St. Paul. Patients were selected from all three agencies. The combined caseload of these agencies was 61 patients, of whom 52 were white. Of those 52, 8 were unavailable for interview, either because they were on administrative leave* or because they had been lost to the agency's follow-up but not yet removed from their official records. Of the 44 available, 1 refused to participate and 3 were rejected because they did not meet the requirements of middle socioeconomic status.** Before a subject was interviewed, he was screened to determine if the geographical area in which he was reared was near enough to the treatment agency to make it practical to match him with a nonaddict control. An arbitrary 150-mile radius was used as the maximum distance permitted. Of the remaining 40 WMSES addicts eligible for study participation, 5 were not selected because they grew up in such distant places that their participation would be impractical.

The Washington Addict Subjects

The same selection criteria were utilized with Seattle; however, there was only one NARA contract agency, The Community Psychiatric Clinic, with a 72-patient caseload, of whom 56 were white.

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* "Administrative leave" meant that the patient had been recommitted to inpatient care. If an addict reverted to the regular use of narcotics or in some other way failed to meet the programs' requirements, he could be recommitted; such inpatient care was usually provided at Lexington, Ky.

** The admission procedures of the NARA program appear to exclude both the high and low SES groups. Addicts of high SES are oftentimes counselled into private treatment, whereas those of lower SES are often without the means, both financial and educational, to cross the "barriers" of the "gatekeeper's" admission procedure. (See "Limitations of Study," p. 72).

Since it had been previously determined to keep the subject number from the 2 geographical areas equal, a random subject selection was made of the 56 white patients in the Washington caseload. The name of each white addict available for interview was drawn from a hat and assigned a number between 1 and 56, representing the order drawn. This, then, became the order in which addicts were screened for study participation. It is interesting to note that after the initial screening process, proportionately more addicts were disqualified or refused to participate from the Seattle caseload than from that of Minnesota. Of the original 56 white Seattle addicts whose names were drawn from a hat, all but 4 had to be screened before a sample of 35 was selected. Of the 17 who were passed over, 4 were on administrative leave, 3 refused to be interviewed, 3 were not middle SES, and 7 were reared in distant locations.

The Controls

Each addict was matched with a nonnarcotic using control on the variables of race, sex, age, and socioeconomic status. These variables were selected to be controlled, as they have all repeatedly been identified as having influence on the incidence of addiction (6;9;14;45;60). In addition, the matching procedure tried to keep constant the exposure both groups had to "contagion" factors such as the prevalence of addicts in their communities or fad type drug experimentation in schools during the adolescent years.

Each addict interviewed was asked for the name of three friends who grew up with him, lived in the same neighborhood and/or attended the same school, were of the same sex, were within five years of his age, and came from about the same economic background, but did not use drugs. From the names provided by the addicts, it was possible to match each one with a nonnarcotic using control.

Locating the controls who met the matching requirements presented some of the greatest difficulties. One problem was that once the control had been located and had agreed to participate, it would be disclosed that he, too, either was currently taking, or had at least tried, narcotic drugs. Unfortunately, no actual count was kept of those so disqualified; however, an estimated 10 percent of the total group or about seven individuals were disqualified as controls because of drug histories.

One absolute requirement was that no one would become a control who had ever tried narcotic drugs for any purpose other than

that prescribed by a physician.* When a prospective control stated that he had taken prescribed narcotics, additional information was sought as to the nature and duration of the episode. Although the occasion did not arise, if a prospective control had taken a prescribed narcotic for a period longer than is normally ordered for analgesic effects, he would have been disqualified. Prospective controls with long histories of recreational non-narcotic drug use were eliminated. Anyone who had ever used a hypodermic needle to self-administer drugs was rejected. Anyone who had used or was using LSD, barbiturates, or amphetamines on a regular basis was disqualified. If a prospective control stated that he had used a "soft drug" at some time, he was questioned as to age of onset, duration of use, motivation for use. Responses describing *single* experimentation in response to peer pressure would not necesarily disqualify the control; however, repeated trials with various soft drugs would. One prospective control was disqualified solely on the clinical judgment that he was not being truthful about his drug involvement, even though his stated history would have made him eligible. There was no attempt to rule out controls based on stated marihuana use.

The controls more than the addicts were reluctant to be interviewed. The controls seemed more suspicious and unwilling to "get involved." However, their reluctance was greatly reduced when the addict assisted in the original contact with the control. When the addict assured the prospective control that the interview was "OK" or was "part of my program," his friend would participate "to help 'Joe' out."

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* The decision not to include, as a control, anyone who had ever tried narcotics recreationally (as opposed to exclusion for habituation or repeated use) was based on an assumption focused at the particular age group of the subjects that anyone reared during this time period would suffer grave social consequences for narcotic use and thus, anyone so electing was in desperate search of status, peer approval, and/or escape. Stringent grave social consequences came about because from the early 1930's to the late 1950's, the Nation was subjected to a "national strategy" aimed at minimizing narcotic use. A massive program, primarily under the direction of H.J. Anslinger, Chief of the Bureau of Narcotics, was administered which was designed to instill negative attitudes toward all narcotic experimentation. This program included congressional lobbies, widespread literature dissemination, selected news releases, lectures for the public and for schools, and other such means of reaching the public. The strategy is documented in *Traffic in Opium,* 1950, published by the Bureau of Narcotics; alluded to in *Narcotic Addiction,* published by the American Medical Association in 1963; and Anslinger's *Traffic in Narcotics,* 1953.

The Distribution of Subjects

After the selection process was completed, subjects who provided the data for this study consisted of 70 addicts and controls from each of the sample areas. Table 20 identifies certain demographic variables of the study population. As can be seen, better than three times more males than females were interviewed which reflects both the sex distribution in the total NARA population (55, p.5) and the estimated sex distribution of all addicted persons in the United States (57, p.439; 6, p.9). The table also points out the mean age of the subjects was about 25. There was no significant difference between the mean age of the addicts and the controls.

Table 20

Demographic Distribution of Study Population

	Addicts	Controls
No. from Minnesota	35	35
No. from Washington	35	35
TOTAL	70	70
Mean Age	25.2 (SD 4.6)	24.8 (SD 4.7)
No. of Females	17	17
No. of Males	53	53

Interviewing Procedures

All interviews, with one exception in Minnesota, were conducted by the investigator. The single exception was the case of a control who, it was learned by the investigator after leaving Minnesota, had not provided adequate information on the portion of the instrument which the subject completed. A new control person had to be found and interviewed.*

* Mr. Byron Laher of the Catholic Welfare Service of Minneapolis provided this service.

Locating the subjects and scheduling meeting times took much time, patience, persistence, and sometimes imagination. In both Minneapolis-St. Paul and Seattle, the counsellors and secretaries assisted in scheduling appointments and in making original contact with the patients. Many interviews for both addict and control actually took place within the treatment agency and on a few occasions, addicts even brought their control friends with them to the agency. Such interviews, of course, took less time than those administered elsewhere and were easiest to schedule. The control group was the more difficult to schedule, in that its members were often working and were less likely to have available the needed two hours for the interview. As would be expected, the investigator had to visit an array of places in the process of subject interviewing.

Data was collected in the Minneapolis-St. Paul area during the months of August and September 1972, and in the Seattle area during November and December 1972. The actual time needed for each interview was somewhat dependent upon how cooperative the subjects were; however, the usual time required was 2 hours. The interview was always broken into four sections, with no one section taking more than 30 minutes. The purpose of dividing the interview in such a way was to give some relief to both the subject and the investigator. The actual interview sequence was 30 minutes of oral exchange, 30 minutes of related self-administered questions, more verbal questions, and finally self-administering the self-attitude scale.

The Research Instrument

General Description

The research instrument was divided into three sections: in the first section, data were collected by oral interview; in the second, subjects filled in short answers and checked appropriate responses to a questionnaire; and in the third, respondents completed a copyrighted measurement scale, the Tennessee Self-Concept Scale. The interview was so proportioned that about half the interview time was spent in conversation and half was used by the subject to fill out short answers and to check appropriate responses to the questions.

All questions of the research instrument were arranged by categories, in an attempt to help the subject retain a train of thought. Such categories included demographic background, early childhood and family, school activities, financial support, leisure time, religious participation, and current information. Both groups, addicts and controls, supplied answers to the same questions. The addicts, however, were asked additional questions concerning their drug-related experiences.

The oral portion of the instrument was administered first in order to increase rapport with the subject. The questions of this portion were so arranged that those asked first were quite general and nonthreatening. If the subject appeared uncomfortable in the oral interview, he was encouraged to talk about less threatening topics until such time as he appeared less guarded. Questions were always encouraged from such uneasy subjects as a means to allay possible fears.

A number of questions were included to test the reliability of the subject's response. The procedures of such reliability testing are discussed in the section "Validity and Reliability" (p. 68). Basically, these questions asked the same question using different words at different points in the interview.

Confidentiality

Strict confidentiality of the data was maintained at all times. The subjects were all advised that the data would be used only for the purpose of research and that in no case would an individual be identified by name. A cross-numbering system prevented name identification. Each subject was given a number, that number was matched with another number in a code book. The code book was kept separate from the rest of the data at all times.

The investigator explained the cross-numbering procedure to each respondent and advised each that he need not answer any question he found objectionable or offensive in any way. Each subject then signed a consent form (parental consent in the case of minors) which stated that he understood the confidentiality of the material, the way in which that confidentiality would be maintained, and his personal option not to answer any question.

The Tennessee Self-Concept Scale

For purposes of this study, the TSCS is the most important measure of self-attitudes, in that it is the scale which is used to test the first major hypothesis. The decision to select the TSCS as a measure of self-attitudes over other scales available was based upon three considerations:

1) the scale has established validity and reliability;

2) the ease and speed in its administration; and

3) the fact that it could be electronically scored without coding which eliminates a potential source of error and bias.

The TSCS, developed in 1965 by William H. Fitts, Ph.D., consists of 100 self-descriptive statements to which the respondents reply on a 5-point scale ranging from "completely true" to

"completely false." The scale is self-administered, taking about 15 minutes to complete. It has been standardized on subjects age 12 or higher with at least a sixth grade reading level.

Ten of the scale's 100 statements were taken from the Minnesota Multiphasic Inventory, L scale, and constitute what are called "self-criticim scores." The other 90 items were from the literature and were subjected to reliability testing by seven psychologist-judges whose classification system was based on the following:

1) the positive or negative position of the statement as to self-regard, self-esteem, or social desirability.

2) the position of the statement as to an internal frame of reference--identity, self-satisfaction, and behavioral self (how he acts).

3) the position of the statement as to an external frame of reference--the physical self, the moral-ethical self, the personal self, the family self, and the social self (78, p.2).

The "Total P Score" is the total of positive scores minus negative results. "It reflects overall self-esteem. Persons with high scores tend to like themselves, feel that they are persons of worth, have confidence in themselves, and act accordingly. People of low scores are doubtful about their own worth; see themselves as undesirable; often feel anxious, depressed, and unhappy; and have little faith or confidence in themselves" (31, p.2).

In addition to phenomenological Total P Score, the TSCS yields six other scores which have demonstrated diagnostic and counselling value in the clinical setting (31, p.3). These subscale scores were not used.

Validity and Reliability

A number of steps were taken to insure the reliability and the validity of the study data. Eliciting data from respondents always brings with it questions of accuracy and truthfulness; when the information sought pertains to antisocial behavior such as drug addiction, the issues of validity and reliability have additional concerns for the researcher.

Because of the researcher's experience and background, numerous clinical impressions about each subject's responses could be made. A less experienced investigator may possibly have missed or misinterpreted the meaning of certain responses. If an

answer seemed questionable, additional inquiry was made. For example, an addict describing the length of his narcotic history as 2 years yet revealing deep scars covered by tattoos in the antecubital areas, or an addict who described no major criminal background but who had a "time mark"* on his face would suggest to the experienced investigator that additional inquiry was indicated. In one instance, a prospective control was rejected because he seemed too sophisticated about narcotic use. Further investigation did confirm the prospective subject as a known user. His desire to be interviewed was an attempt to help out his peer, a subject in the NARA addict population.

Several steps were taken during this study to encourage an atmosphere of trust. First, in both cities, the agencies' program directors not only permitted the study to be carried out but also openly endorsed the experience. The investigator met with the agencies' staffs so that each staff would understand the study design and see the director's endorsement. It was planned (in Minnesota especially) that the patients' counsellors would discuss the study in their therapy groups in an attempt to promote participation. Certain patients were selected as the first to be interviewed, with the knowledge that these key individuals would quickly communicate their reactions to the interview and the interviewer to the other patients. Every possible effort was made to gain the subjects' trust and confidence. As a result, the interview process was labeled as "painless," nonthreatening, and confidential by the subjects involved. In both cities some addicts actually volunteered to be interviewed even before they were asked.

Since all of the interviews were collected by the same investigator, variation of procedure and wording were kept to a minimum. The oral questions were always read or recited from memory exactly as they were worded; interpretations, if needed, were consistent; and the interview portions were kept in the sequential order.

Questions within the instrument were designed to be relevant, lucid, logically sequential, and capable of being tested for reliability. Questions were first selected which seemed to be logically relevant to the theoretical model. Several drafts of the questionnaire were made with editing and refinement of each draft. Finally, the instrument was pretested among both addicts and controls. Questions which were not clear and required interpretation were revised.

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* A "time mark" is a symbol convicts use for recognition from other convicts, a spot tattoo no larger than a small nevus usually located on the cheek or forehead.

Throughout the questionnaire intra-question reliability checks were made to test the consistency of the subject's response. Numerous questions were worded different ways but focused at the same construct and designed to obtain similar answers. For example, subjects were first asked about their parent's *interest* in the respondent's academic efforts; at a later point in the interview, a situational question asked, "When you brought home school papers or other such evidence of your school work, what was your parent's usual reaction?" The answer choices all dealt with the degree of demonstrated interest. Other similar intra-question reliability tests focused at consistencies between answers on the oral section and the written section. For example, in the oral section, a question was asked, "What was your favorite free time (leisure) activity? Up to age 13 and between 13 and 17?"; in the written section the subject was provided a list of leisure activities and asked to tell how often, if at all, he participated in each one up to the age of 17. The modal inconsistencies of all such question reliability checks was zero.

In considering the validity of the scales used to measure self-attitudes, several points were considered, the first of which had to do with "construct validity" as discussed by Ruth Wylie in her classic book, *The Self-Concept*. She asserts that problems of measuring the phenomenal field may be seen as establishing construct validity. Since self-concept is an abstraction--a construct--it can only be "observed" through predictions made from the propositions assigned to the construct. Thus a valid self-concept measure should not only rate how an individual sees himself, but also it should predict such things as how the subject interacts with others, how easily he can make decisions, how successful he is at prescribed tasks, and the like.

The Rosenberg Scale has been subjected to the tests of construct validity; in fact, Robinson describes the Rosenberg Scale "as one of the few which has been accepted as a valid and reliable measure of self-esteem" (63, p.43). The Rosenberg Scale is a Guttman scale with 93 percent reproducibility, 73 percent scalability for items, and 72 percent scalability for individuals. Test-retest reliability of .85 was established after a 2-week interval (65, p.307).

Fitts confirmed the construct validity of his TSCS instrument by showing that it discriminated subjects in a theoretically predictable way. For example, there should be a difference between psychiatric patients and nonpatients and between "average" persons and those who are psychologically integrated. Fitts found that when he compared the scores of a group (N = 369) of psychiatric patients with the scores of a group of nonpatients, the patient group had more negative self-concepts at statistically significant levels (most at the .001 level) (31, p.17). In an effort to demonstrate the other end of the mentally ill to

mentally healthy continuum, Fitts collected data from a group of 75 people characterized as highly integrated in personality. He found that the mean scores and standard situation for virtually every subscore of the scale substantianted the hypothesis. When comparing the three groups, the patient group almost always showed a wider spread of scores than did the norm group, while there was even less variation within the personality integrated group.

A number of studies which made use of the TSCS have confirmed predicted lower self-concepts for groups whose behavior differed from the norm. In the manual provided with the scale, three such studies are reported, one which showed a predicted difference between delinquents and nondelinquents, another which demonstrated predicted differences between unwed mothers and a control group, and a third which successfully differentiated soldiers capable of completing the stresses of paratrooper training from those who could not (16, p.24).

Statistical Procedures

An array of statistical procedures was used to analyze the data. The first procedure was to determine the frequency distribution of responses to each question asked in the study. Frequency displays provided an opportunity to examine natural groupings of responses and identified variables which had large missing-data components. If the amount of missing data would influence the interpretation of the variable, that variable was not used in analysis.

It was often necessary to test for significant differences between two independent means. In such cases the Student's *t* test was performed. The chi-square test was repeatedly used to determine group differences in the frequency of response of nonmeasurement data.

Since the addict subjects were matched with nonaddicts on a number of variables, whenever possible, the data were examined by means of matched-pairs analysis procedures. The purpose of the matching was to minimize the effects of confounding and extraneous variables (46, p.250). Three separate matched-pairs tests were chosen: Wilcoxon Matched-Pairs Signed-Ranks Test, the matched-pairs *t* test, and the McNemar's matched-pairs test for dichotomous outcome. The Wilcoxon test was used to compare how the addicts ranked with their matched controls on self-attitude measurement. The matched-pairs *t* test was used whenever two means were to be compared that were not necessarily independent

of each other.* One example of the matched-pairs *t* test use can be seen in the comparison of the addicts and the controls as to the reported age at which they first met a narcotic addict. The McNemar test was used to examine the relative frequency with which antecedent factors were present among the addicts and the controls. For a detailed discussion of the procedure for utilizing the McNemar test, see Joseph L. Fleiss' book, *Statistical Methods for Rates and Proportions*, New York: John Wiley and Sons, 1973, p. 72.

Limitations of Study

Because of the small number of subjects studied and the procedures of sample selection, no generalizations can be made either for the narcotic addict population as a whole or for the WMSES addict population. The interpretations of results is subject to restriction imposed by the nature of cross-sectional studies. It is also limited by the possible reduction of validity and reliability associated with retrospective data.

Study Size

The number of subjects in this study was 70 addicts and 70 controls. This sample represents the "universe" of WMSES addicts receiving treatment at two particular contract agencies of a federally sponsored civil commitment program. There can be no assurance, however, that these two agencies are representative of the other agencies across the Nation which were being sponsored under provisions of the same law. In fact, the methodology of subject selection suggests the agencies are not "typical" in terms of ethnic distribution.

Sample selection from studies that focus on subjects participating in activities which do not have social approval always shares the sampling problem of the unknown denominator. The representativeness of the sample to the universe is unknown; therefore, even if the number of subjects selected is large, there can be no assurance that the unknown portion of the population possesses the same qualities as the sample being investigated.

Treatment Program Administration

The manner in which patients are admitted to the federally sponsored program also raises the question as to whether or not

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* Since the addicts and the controls were matched on variables assumed to have an association with addiction (age, sex, race, SES, and environment), it was not possible simply to compare the two groups' means with the assumption that the means were independent.

the sample represents other addicts. Some are admitted as volunteers, others as volunteers under pressure from authorities or families, and still others are there as a result of ajudication. Further, all prospective patients go through several screening procedures to see if they are "apt to be rehabilitated." On at least three distinct points prior to official acceptance, prospective patients can be discharged if they do not satisfy subjectively determined admission requirements: first, a United States attorney makes a preliminary decision about the addict's "suitability"; secondly, a Federal judge must concur; and finally, two physicians must recommend the addict for treatment. At the time this study was conducted, approximately 50 percent of those attempting to enter the treatment system (and who had already been "approved" by the U.S. attorney and the judge) were found "not suitable for treatment" by the physicians (55, p.5). Therefore, it cannot be said that those patients who were interviewed represented either the total WMSES addict population or even those WMSES addicts who applied for admission to the program.

Matching Procedure Biases

The subject selection procedure used (p. 61) may be subject to bias. For example, the addict subjects may have only provided names of persons for their matched control who they thought would enhance their "mirrored image" (consistent with James' social self and Cooley's looking-glass self). Conceivably they might have given names of persons with whom they would have *liked* to have had similar experiences rather than those with whom they actually did share experiences.

Another possible bias source would be the way in which the controls were located. If a potential control could not be located after repeated attempts (this included telephone calls, visits, and exhaustion of all leads), the second person on the list was sought. Obviously a person who was employed, owned a home, and had family responsibilities (all indices of positive self-attitudes) would be easier to locate than a nonemployed drifter who had few responsibilities (indices of negative self-attitudes). Therefore, the selection process may have eliminated some potential controls with negative self-attitudes.

In 4 cases out of the total 70 addict subjects, it was not possible to select a matched control from the first 3 names provided. In such an instance, the addict was requested to provide additional names. In all probability some bias was introduced through such name substitution, in that the addict's fourth choice might be less like the addict (in terms of the community background variable) than his first choice.

Considering the limitations of time, money, and manpower, little could be done to eliminate these sources of bias. It had

to suffice to be aware that such biases could influence the matching procedure.

Relevancy of Instrument

Much time and effort was spent in designing the research instrument; many advisory sources were consulted. Questions were selected either on the basis of previous self-theory research or because of apparent relevancy to the theoretical model. In no way, however, could all the variables suggested as pertinent to the theory be utilized. It is possible that some of the *most* relevant variables were not included in the instrument.

The nature of the data sought in this study required self-reporting about phenomenological concepts. The problem of distortion by the participants, due to memory failure and/or fear of exposure, exists. Little could be done about memory failure because, since it is phenomenological data which are sought, memory coaching efforts could bias the recalled perceptions. Mandell and Amsel (55, p. III 19) point out that social researchers in the field are even more concerned, however, about willful distortion resulting from the fear that exposure may bring about legal or social strictures. Thus, all subjects were told they need not participate in the study, that it was of a voluntary nature, and that they were free not to answer any question found objectionable or in any way offensive. Nonetheless, there may have been some distortion due to fear of exposure.

Cross-Sectional Study

Cross-sectional studies can only measure a condition as it exists at that particular time. Any inferences about the future or conjectures about the past cannot be verified without additional time-span study. Causal associations cannot be demonstrated without making use of (broad operational) assumptions. Since all the addicts possessed the dependent variable, addiction, prior to being interviewed, the temporal requirements of causality cannot be demonstrated. Further, even though matching procedures were incorporated to guard against it, there exists the ever-present problem of possible unidentified factors influencing the dependent variable, addiction.

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